

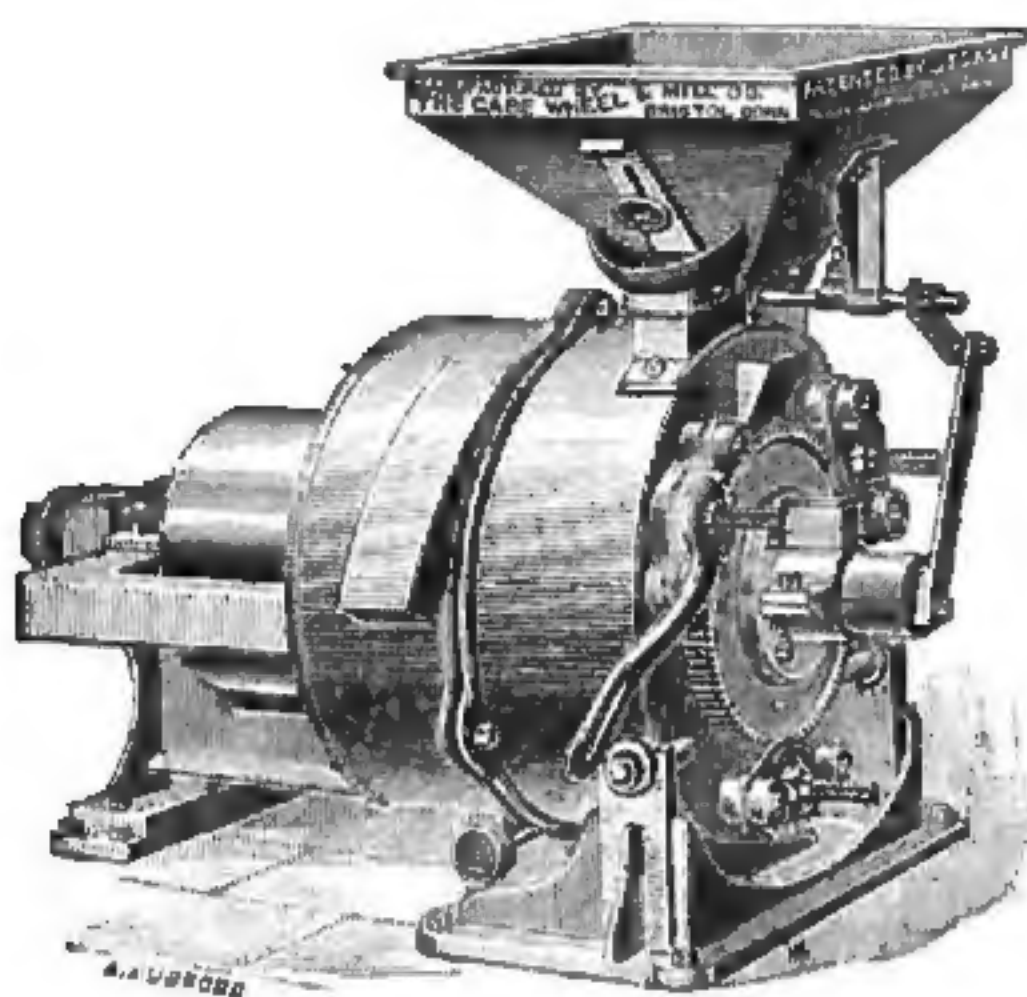
CHRONICLE OF THE GRAIN AND FLOUR TRADE

PUBLISHED EVERY MONDAY MORNING.

VOL. XXII. No. 1.

BUFFALO, N. Y., MARCH 8, 1890.

\$1.50 PER YEAR.



VICTORY OVER ALL OTHERS. SINGLE & DOUBLE VERTICAL GRINDING MILLS. (J. T. CASE'S PATENT.)

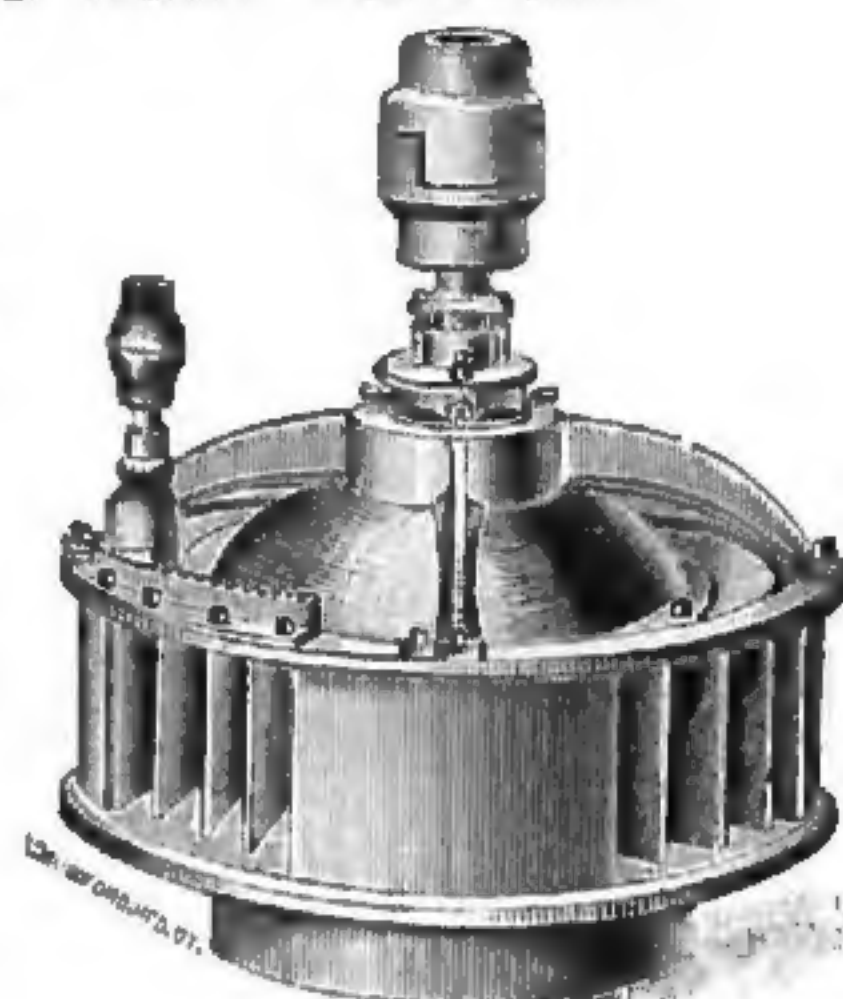
FACTS ARE MIGHTIER THAN ASSERTIONS. READ WHAT THEY SAY:

"Our 20-inch mill made by the Case Wheel & Mill Co. is in every respect satisfactory, easy to handle, and best results obtained of any mill in the country, with same quantity coal and power."—A. S. RUSSELL & Co., Meriden, Conn.
"Superior to any mill in use."—GEO. WESTON, Bristol, Conn.
"The best satisfaction in quantity and quality."—CHILD SELEVATOR, Manchester, Ct.
"We take pleasure in recommending it."—GARLAND, LINCOLN & Co., Worcester, Mass.

SEND FOR CATALOGUE—ILLUSTRATED AND DESCRIPTIVE.

The Improved National Turbine Water Wheel

The Best for Economy; The Best for Durability; The Best for Power. ONE THOUSAND FIVE HUNDRED NATIONAL WATER WHEELS IN USE Prove that our Assertions are Supported by the Leading Manufacturers in the Country. Send for illustrated catalogue and prices to the manufacturers.



The Case Wheel & Mill Co., Bristol, Conn.

NEW SHARON, IOWA, Feb. 10, 1890.

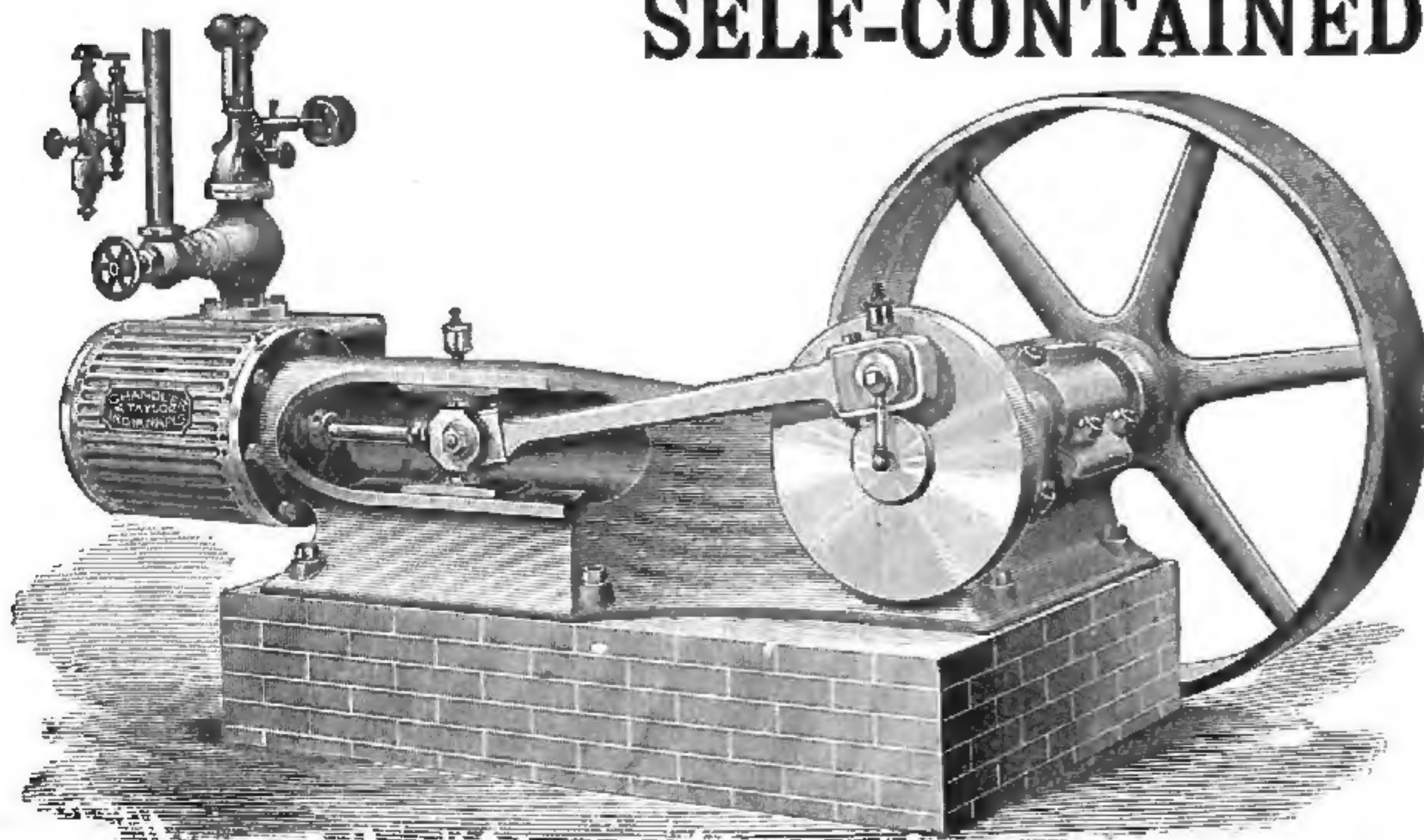
THE J. B. ALLFREE COMPANY, INDIANAPOLIS, IND.

GENTLEMEN: We have had your mill in operation since November, 1889. It is an 80-barrel mill and put up in splendid style and finish. The *workmanship is perfect*, and in every respect, and all *our machinery runs with the greatest of ease*. Our engine is an "Allfree Automatic," and *it is a "daisy."* It *plays* all day long and takes *but little fuel*. *We would sooner have it than a Corliss*, and think it is *quite as economical*. Our entire mill outfit is first-class, and is made by *The J. B. Allfree Company, of Indianapolis, Ind.* The *shaker scalper* is a *success*, and *does better work than a reel scalper*, and runs easily with a 3-inch belt.

We wish all intending to build mills could pay us a visit, so that we could show them all the good points of our mill—*for to see is to be convinced of its superiority*. Our mill does good work, and we can say that we have had *no choke-up* and *no belt to change since we started*. We can *fully recommend the J. B. Allfree machinery* in every respect to millers wishing to build or remodel their mills.

Yours truly,

NEW SHARON MILL CO.,
R. D. HIGH, Manager.



SELF-CONTAINED STEAM ENGINES Stationary or Semi-Portable.

High Standard Maintained.
Prices Greatly Reduced.

WRITE FOR NEW ILLUSTRATED
CATALOGUE NO. 32.

Chandler & Taylor Co.
Indianapolis, Ind.

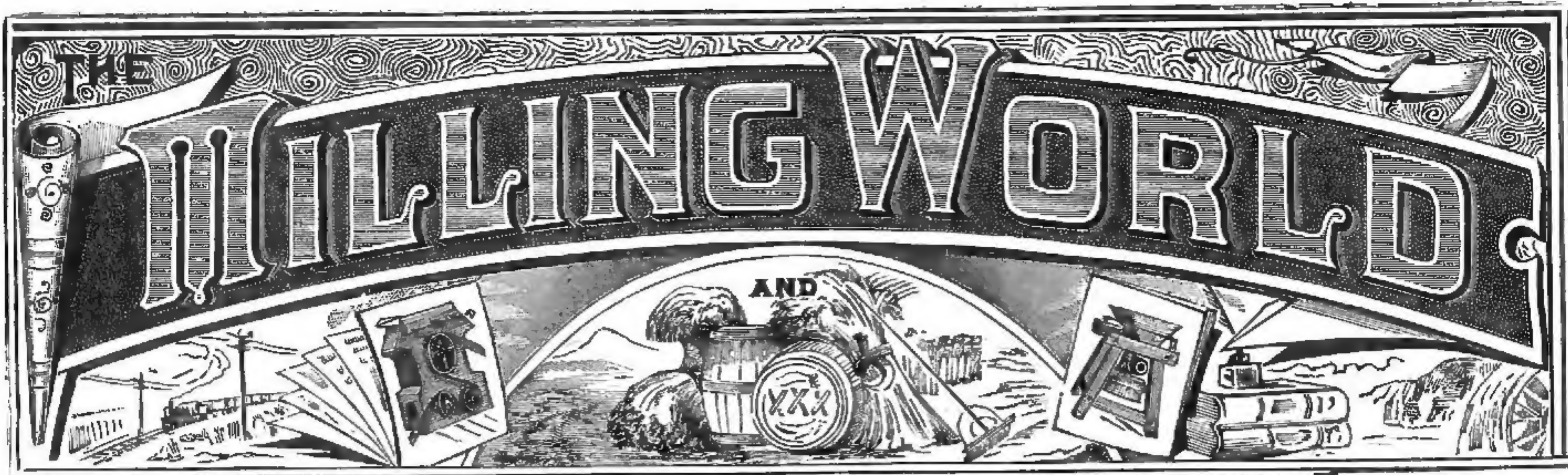
Engines, Saw-Mills and Drain Tile
Machinery a Specialty.

CASE.

CASE MFG. CO., COLUMBUS, O.
GENTLEMEN: If we were to build a hundred mills we
would not permit any other than the "CASE" roll to
enter them. They are the best roll on earth.
Yours truly,
W. C. MANSFIELD & CO.

W. C. MANSFIELD & CO.,
MERCHANT MILLERS,
CLEVELAND, TENN., AUG. 29, 1889.

CASE.



CHRONICLE OF THE GRAIN AND FLOUR TRADE

PUBLISHED EVERY MONDAY MORNING.

VOL. XXII. No. 1.

BUFFALO, N. Y., MARCH 3, 1890.

\$1.50 PER YEAR.

AUSTRALIAN crop reports already begin to show a falling off from the early and distinctly bear reports via England. The boomers sent out word that the crop was turning out about 13 bushels to the acre. Cable reports a week ago whittled the average down to 9½ bushels. Reports later on may be depended upon to reduce the average still more. The total Australasian crop this season is now estimated at 38,850,000 bushels of wheat, against 38,400,000 bushels on the boom crop of 1887. Evidently Australian wheat will cut a less figure in making prices in Europe than it was expected to.

WE are sorry to see the immigration figures keeping well up. During January the number of immigrants arriving in the United States was 11,298, against 10,272 in the same month last year. For the seven months ended with January, this year, the total was 201,706, against 212,590 in the corresponding time a year ago. The Austro-Hungarian contribution was 25,170, against 16,356, a year ago, Germany 45,751, against 49,441, Great Britain 59,761, against 75,823, Sweden and Norway 16,229, against 22,637, and Italy 16,440, against 10,888. The decreases and increases are just opposite to the desirable in each case. The year promised at the opening a large decrease in immigration, but the first seven months show a decrease of only 10,884 in comparison with last year. We wish Europe could find labor and provender for every one of her citizens from this time on, or, failing in that, let her send her emigrants to Canada, to Argentine Republic, to Australia, or to some other country where citizens are more badly needed than here.

THE sentiment of opposition to the Interstate Commerce law is increasing daily. The persons directly interested are coming to understand that the bankrupting, blockading interference of the state and national governments in purely private business affairs is bound to have an injurious effect on general business. The anti-railroad laws now in existence are ruining the roads already built, preventing the building of projected lines, checking the development of new sections, restricting the business and growth of old sections, tying the hands and feet and putting out the eyes of domestic enterprise, assisting competitive foreign enterprises that are subsidized by government, prohibiting healthful competition, increasing the cost of traffic to the public, cutting down profits on the agricultural produce of inland sections, and in every other general and particular way militating against the prosperity of the community, while infringing most intolerably upon the rights of the corporation and of the individual. These laws should be amended—out of existence.

AN admiring correspondent writes: "I'll bet you can coin the longest words anybody every saw or heard. You're a corker on big ones, and no mistake!" We hate to disturb our correspondent's faith in our supreme sesquipedalian verbitectural capabilities, but, in the interests of truth and modesty, it must be done. How do our efforts compare, for instance, with the following prize long-system words from

Berlin, Germany? "Transvaaltruppentropentransporttrampelthiertreibertrauungsthranentragoedie." The interpretation of this somewhat involved idea would be "The tearful tragedy of the marriage (though why tragedy and why tearful?) of a dromedary driver on the transport of the Transvaal troops to the tropics." Another gigantic attempt at alliterative word-making looks hardly less appalling: "Mekkamuselmannenmassenmenschelmordermohrenmuttermarmormonumentenmacher." Which is supposed to mean "the maker of a marble monument for the Moorish mother of a wholesale assassin among the Mussulmans at Mecca." It is only in Germany that they can do this sort of thing. We Americans must plead excessive short-system sesquipedalioconcatenaticopolyhonicopolysyllabisticoverbologicallyallisticallaceousness in comparison with our Teutonic cotemporaries. Our correspondent will please express the laurel to Germany.

AFTER the new constitution shall have been inserted into the moribund anatomy of the Millers' National Association, and all the sunken spots shall have been puffed or padded out, and all the joints shall have been oiled, and all the strings shall have been firmly fastened to the movable parts, and everything shall have been made ready for motion on the jumping-jack principle, it will be reasonable to expect that the reports of the association conventions will read about as follows: "The convention opened at Ozone Hall, Minneapolis, Minnesota, with 10,000,000 barrels of patents, 9,000,000 barrels of straights and 1,000,000 barrels of low-grades and red-dogs in attendance. The chair was occupied by 8,000 barrels of 'Best,' and the secretary's chair was held down by 000,000,000,000,000,000,000 barrels of ungraded material from no particular mill. When the Bogus Resolution matter was ripped open and presented for discussion, it was settled in the affirmative-negative by an equal division, just 10,000,000 barrels voting pro and con, and the rout of horse, foot and dragoons by the 'Yahoo,' disclaiming any particular ability on its own part, was pusillanimously registered as complete. The barrels voted unanimously on most of the subjects, like bills-of-lading, European competition, free burlaps, free jute, restriction of output, monopoly, and such. Some of the barrels gave forth great volumes of sound, suggesting vacuity, and others hooped up things in a less sonorous, but far more effective, way. The barrels went on a drive about the city. In the evening the barrels were entertained at a bang-up banquet, and all the barrels were not empty after the banquet had become a matter of ancient history. One of the most pleasing features of this highly successful meeting of the barrels was the complete lack of any disturbing topics, like troublesome discussions of short and long systems, or the best modes of handling different wheats, or the best lines of flour-making machinery to be used. All these common things were utterly ignored, much to the delight of the barrels. The barrels broke (all) up at a late hour and left Minneapolis perfectly dazed by the scintillant greatness of the swallow-tailed and huge-headed, not-classified nor classifiable, barrel of ozone that aimed to conduct this convention of barrels. It was a great success!"

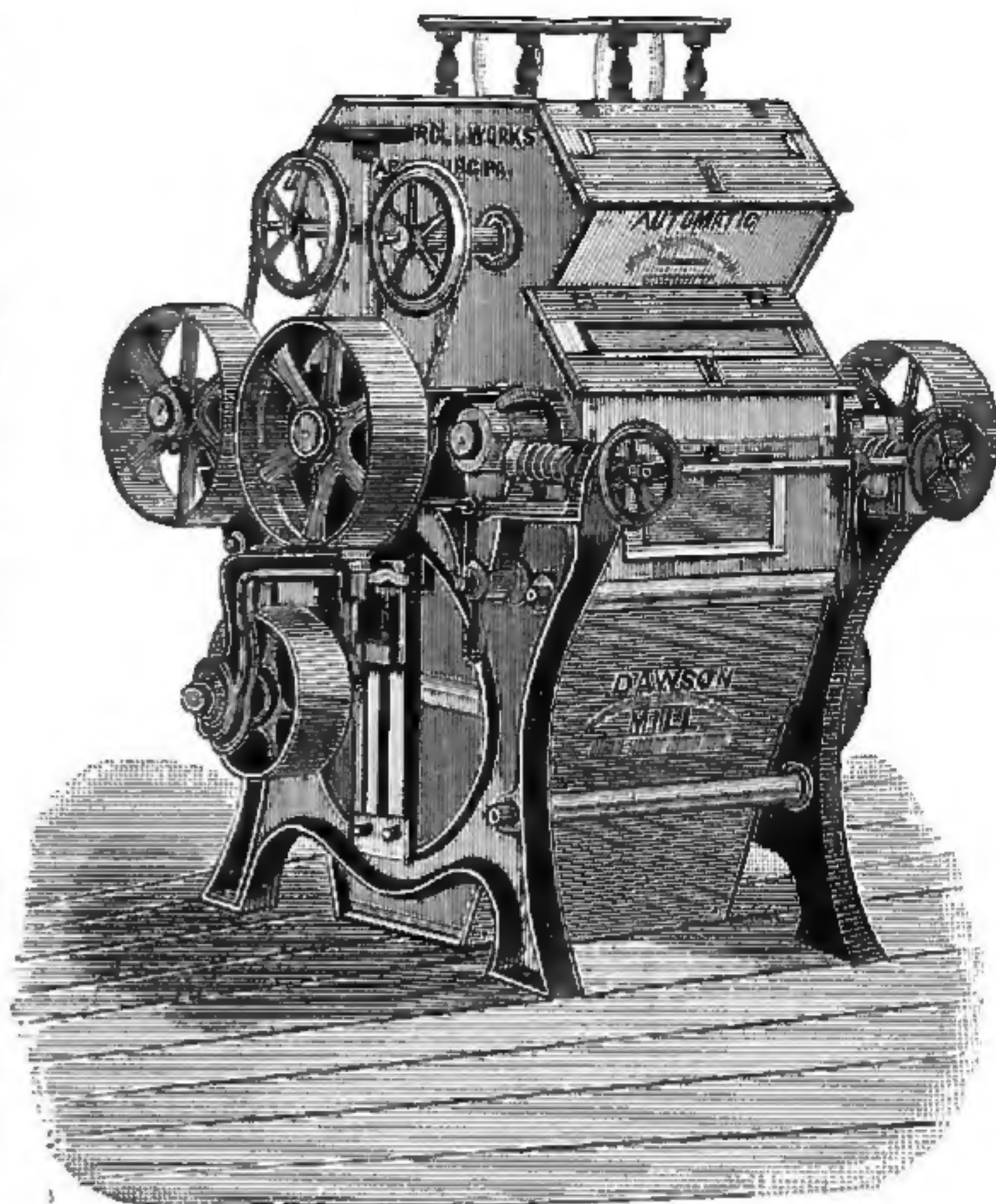
Dawson's Roller Mill

Is acknowledged to be the very best in the market. It has our Patent Automatic Centrifugal feeder, never failing to feed the stock the full length of rolls in an even sheet. It is the Latest and Best feed out, uses less power and is simple in construction. It can be placed on any style of machine with little expense. We use for roll bearings phosphor-bronze metal which will admit rolls being run at any speed without heating and with little friction, and uses little oil. We use the Dawson Corrugation, which is admitted the best in long or short system mills as the action is granulating rather than CUTTING.

We have a large plant to Re-grind and Re-Corrugate Rolls.

Owing to our late increased facilities and central location we are enabled to ship goods promptly on the shortest notice.

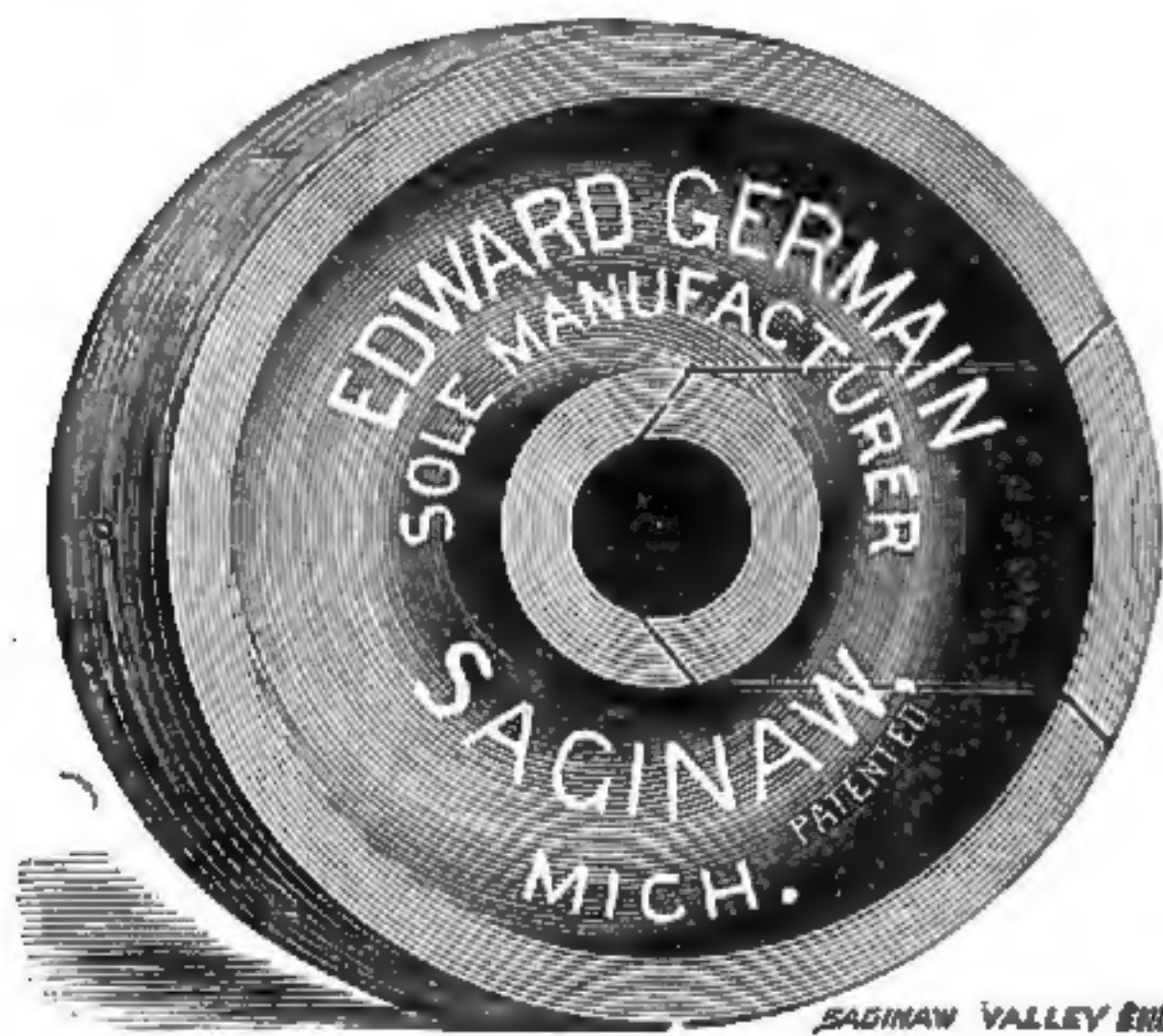
PARTIES CONTEMPLATING REMODELING THEIR MILLS OR BUYING ANY ROLLER MACHINES ARE REQUESTED TO PUT THEMSELVES IN CORRESPONDENCE WITH US.



FOR PRICE LISTS AND CIRCULARS, ADDRESS,

Dawson Roll Works, Harrisburg, Pa.

The Cowles "Reliable" Sectional Wood Pulley



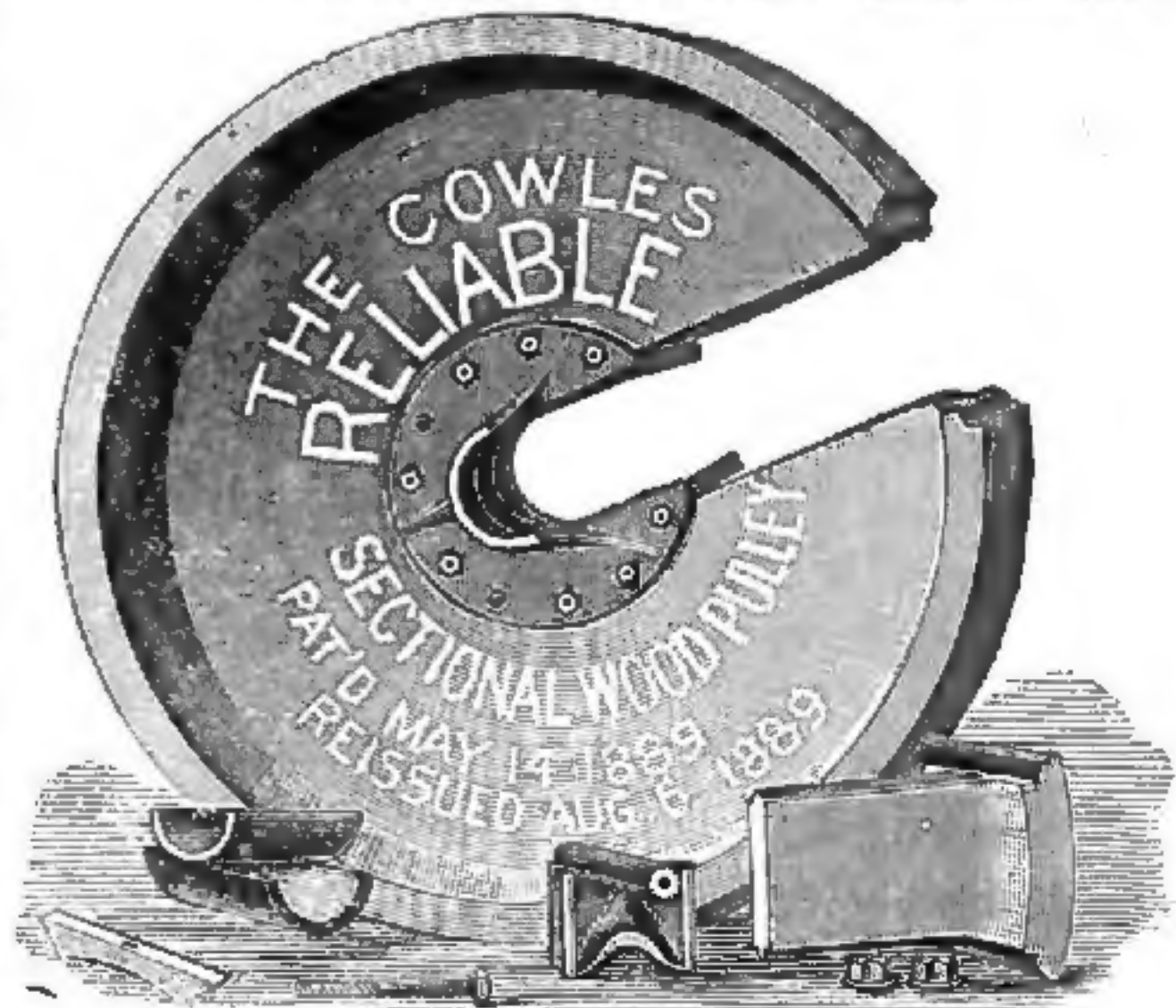
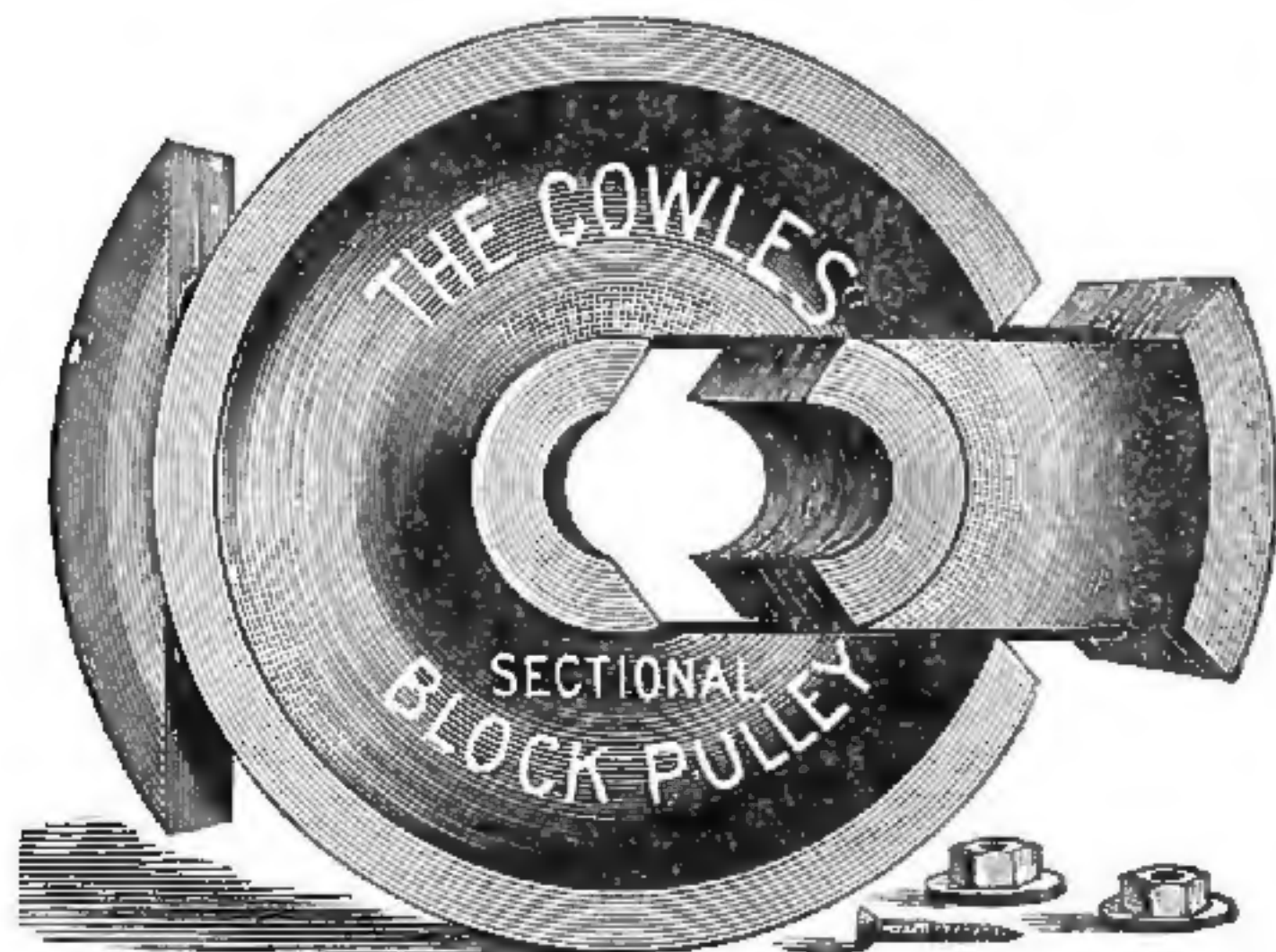
Web made of several layers glued together with grain crossing, and faced up on both sides. Iron flanges securely bolted to web. Rim put on after web has been trued up. Web and rim turned on inside and face, making perfect running pulley. Rim supported entire circumference. Positive self-gripping device for securing pulley to shafting, which is self-centering, and can not slip with wear.



A wooden rim pulley transmits from 30 to 50 per cent. more power with same belt than an iron one.

Two-thirds lighter than iron, bearings will wear longer and the expense for lubricant will be less.

Having solid web, there is no air resistance. The "Reliable" can be placed on shaft or position changed in one-fourth the time required with any other pulley.



EDWARD GERMAIN, SOLE MANUFACTURER SAGINAW, MICH., U.S.A.



PUBLISHED EVERY MONDAY. OFFICES: { Corner Pearl and Seneca Streets,
Over Bank of Attica.
McFAUL & NOLAN, - - - PROPRIETORS.
THOMAS MC FAUL, JAMES NOLAN.

SUBSCRIPTION.

In the United States and Canada, postage prepaid, \$1.50 Per Year, in advance; remit by Postal Order, Registered Letter, or New York Exchange. Currency in un-registered letter at sender's risk.

To all Foreign Countries embraced in the General Postal Union, \$2.25 Per Year, in advance.

Subscribers can have the mailing address of their paper changed as often as they desire. Send both old and new addresses. Those who fail to receive their papers promptly will please notify at once.

ADVERTISING.

Rates for ordinary advertising made known on application.

Advertisements of Mills for Sale or to Rent; Partners, Help or Situation Wanted, or of a similar character One cent per word each insertion, or where four consecutive insertions are ordered at once, the charge will be Three cents per word. No advertisement taken for less than 25 cents. Cash must accompany all orders for advertisements of this class.

Orders for new advertisements should reach this office on Friday morning to insure immediate insertion. Changes for current advertisements should be sent so as to reach this office on Saturday morning.

EDITOR'S ANNOUNCEMENTS.

Correspondence is invited from millers and millwrights on any subject pertaining to any branch of milling or the grain and flour trade.

Correspondents must give their full name and address, not necessarily for publication, but as a guarantee of good faith.

This paper has no connection with a millfurnishing house and aims to represent the trade without prejudice, fear or favor.

Address all communications

THE MILLING WORLD,
BUFFALO, N. Y.

Entered at the Post Office, at Buffalo, N. Y., as mail matter of second-class.

SITUATIONS WANTED.

Advertisements under this head, 25 cents each insertion for 25 words, and 1 cent for each additional word. Cash with order. Four consecutive insertions will be given for the price of three.

SITUATION WANTED.

Head miller with over 20 years experience want to make a change this spring. Address, A. MILLER, 67 Weaver Alley Buffalo, N. Y. 4t

WANTED.

A situation in some flouring or grist mill, by a man who has had good experience with the buhr system. Can furnish best of references. Address, THOMAS H. NICHOLAS, DeRuyter, N. Y. 14

SPECIAL ADVERTISEMENTS.

Advertisements of Mills for Sale or Rent, Partners Wanted, Machines for Sale or Exchange, etc., etc., cost 1 cent per word, for one insertion, or 3 cents per word for four insertions. No order taken for less than 25 cents for one insertion, or 50 cents for four insertions. Cash must accompany the order. When replies are ordered sent care of this office 10 cents must be added to pay postage.

WANTED.

The address of Mr. Buhr Miller who was formerly a citizen of Prosperity removed to Adversity, and when last heard from was in Despondency looking for a job. By the will of his uncle Oliver he becomes heir to a modest fortune to obtain which he should address the FLENNIKEN TURBINE COMPANY, Dubuque, Iowa. (Exchanges please copy.) Administrator.

FOR SALE.

One-Hundred Barrel Roller Mill, in one of the best winter wheat sections of the country. Wheat brought to the door in wagons, and flour can be shipped in any direction by six railroads and river. Splendid home market, here and in Louisville. Also a Sixty-Barrel Custom Mill, roller, running full time on custom, and can hardly keep up. Paying well now, but satisfactory reason for selling. Either or both will be sold cheap. J. M. HAINS, New Albany, Ind. 208

MILL MACHINERY FOR SALE.

One No. 0 Standard Combined Separator, Smutter and Brush Machine; new, best make.
One 20-Inch Under-Runner Portable Mill, French Buhr Stone, capacity 10 to 12 bushels per hour; new, best make.
One 14-Inch Vertical Feed Mill; best make, new, a bargain.
One No. 6 Dustless Separator; new, a bargain.
One No. 1 Full Rigged Combined Dustless Separator; new, a bargain.
Four Corn Cob Crushers, right or left hand, driven from above or below, best make; capacity 40 to 60 bushels per hour.
Three No. 1 Corn Shellers, capacity 200 to 300 bushels per hour; new.
One No. 2 Purifier. New. Best make. A bargain.
One 20-Inch Portable Mill.
One 18-Inch Double Gear Portable Mill.
For particulars address, FRANK SMITH, care of THE MILLING WORLD, Buffalo, N. Y. 5tf

FOR SALE CHEAP.

One 36-In. Iron Frame Portable Mill, French Burr Stone, Used about 2 months.
One 20-In. Vertical Mill, French Burr Stone, Used about 30 days.
Three Pair 42-In. Old Stock Feed Stones.

FOR PARTICULARS ADDRESS,

SAMUEL CAREY, 17 BROADWAY, NEW YORK.

FOR RENT.

Clinton Mills, at Black Rock, Buffalo, for rent on reasonable terms, recently repaired and put in good order. Apply to CHAS. DANIELS, over 811 Main Street, Buffalo, N. Y. 6tf

FOR SALE.

Flour and feed mill, with water power and three run of stones, for sale cheap; also dwelling house and garden. Situated half a mile from depot on New York and New England R. R. For particulars, address, MRS. M. E. DOUGHTY, Green Haven, Dutchess County, New York. 2427

FOR SALE OR TRADE.

For a good farm, Mill Property in Northern Indiana; has been overhauled within three years, with all new machinery. Good water-power and splendid custom trade; 2½ miles from station. Has three run of stones. Address, "Z," care of THE MILLING WORLD, Buffalo, N. Y. 24

THE man who thoroughly and unqualifiedly believes in the Interstate Commerce law, who believes it to be beneficial, and who can show good reasons for his belief, has a fortune in reach. He is wanted as a new and startling attraction in a dime museum. His salary will be left to his fixing. Any figure he asks will be paid.

SAN FRANCISCO shipped 6,288 tons, or about 210,000 bushels, of wheat to the United Kingdom, France and Belgium on the 18th of February. Evidently the European buyers are not quite so well supplied as their recent abstinence would seem to imply. Nor can they be placing much reliance upon the alleged "enormous surplus" of wheat in Chili, Argentine Republic and Australasia, of which so much has recently been said by European grain journals.

BRITISH prospects for an adequate supply of wheat from India do not appear to be very cheering. Every feature of the situation betokens an early and disastrous collapse of the Indian wheat enterprise. Reduced shipments have followed reduced production, and the outlook for the present crop may be judged by the following comment by "Bell's Weekly Messenger," London, England: "Our great Indian dependency is in dread of its coming harvest, specially in the broad corn-growing districts of the South. The weather in the Madras presidency has been dryness itself, and crops are perishing over a considerable area. Bread riots have already occurred at Trichinopoly, and the government needs to be alive to possible conditions. Happily the extension of the railway system and state guarantee has made a disastrous famine almost an impossibility." The Indian obstacles seem to be insurmountable. The British railroads in India were designed to develop Indian wheat culture so rapidly that, in 1889, Great Britain was to be freed from dependence upon the United States for wheat. That was prophecy. Here is 1890, and the best the British railroads in India are expected to do is to "make a disastrous failure almost an impossibility." That is hard fact, and it knocks the prophecy into everlasting pi.

COMMENTING on the nigri-fied optic which Judge Blodgett bestowed upon the Consolidated Roller Mill Company in his adverse decision, our esteemed cotemporary, "The Roller Mill," says editorially: "The decision will bring temporary relief to many an anxious miller, but inasmuch as the Consolidated Company recently won a similar suit before Judge Brown, of Michigan, it is hardly to be expected that they will accept this latest decision as final." As our cotemporary enjoys large facilities for knowing the intentions of the Consolidated Roller Mill Company, it may be taken for granted that this utterance means "fight" on the part of that company. If our cotemporary is not expressing the intention of the Consolidated, but is merely saying encouraging things on its own responsibility, we advise it to take the pains to learn something about the fate, in the Supreme Court, of appeals from the decisions of Judges Gresham and Blodgett, both of whom have decided against the Consolidated. Our cotemporary may be, or may not be, intimately "siamesed" to the Consolidated, and its utterances may mean little or nothing, but we advise it not to hold its breath during the "temporary relief" time to which it alludes. Doubtless its sympathies are strongly with the Consolidated, and the "anxious miller" will remember that fact.

THE IMPROVED STANDARD TURBINE.

Burnham's horizontal shaft turbine wheel, the "Standard," is shown in the accompanying engravings. In this wheel the makers, Messrs. Burnham Brothers, of York, Pa., claim to have corrected all imperfections in such constructed wheels, and that theirs will continue to operate for years and not require any more attention or repairs than when run on

is the new Improved Standard Turbine Wheel, patented in 1883 and 1888. All flanges and other parts forming joints have turned or planed surfaces which insure tight joints. The stay-arms A. A. in the cover on the wheel-case and in the quarter turn are held in place by large bolts, shown in quarter turn, so that each set of arms is adjustable. The hubs of these stay-arms are bored out. The gate-arms B. B.

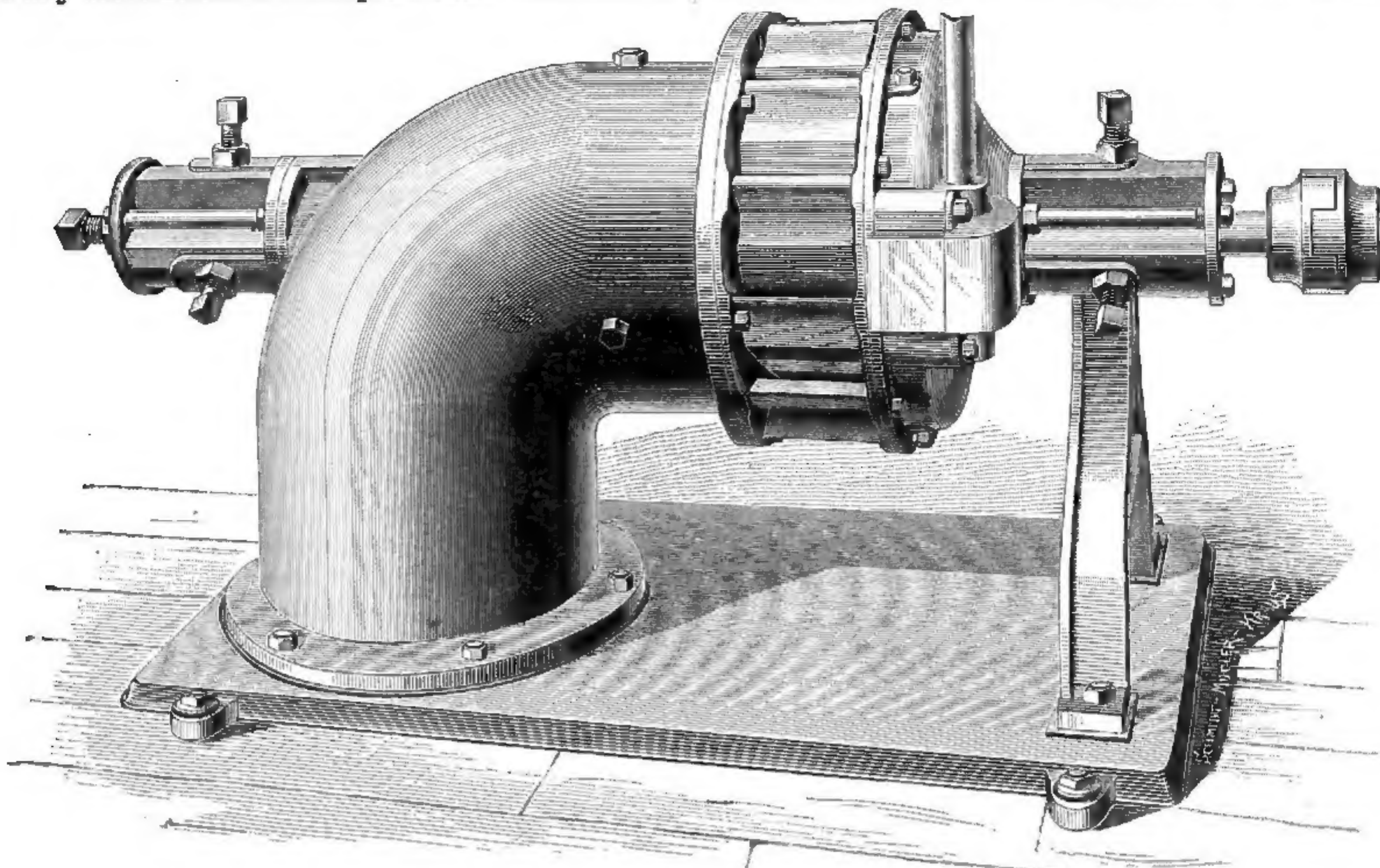


PLATE 1.—THE "STANDARD" HORIZONTAL SHAFT TURBINE WHEEL COMPLETE.

a vertical shaft. The principal defects in the French Jonval turbine were the hard-operating gates and the wearing out of the step on which the wheel turned. These defects were corrected by inventions, patented in 1859, which inventions are now used by all manufacturers of downward discharge turbines. Their late inventions correct similar defects in horizontal shaft wheels. Their long experience in the wheel business has taught them that turbine wheels must be con-

have on their outer ends a ring, which is turned and fitted to the top and bottom of the gate, and the center journals are turned to fit the bored-out hub of the stay-arms; and when all are put together, the gate is hung on the two long journals. The wood bearings C. C. are self adjustable, and in case of wear can be readjusted to line up the shaft. The wood end bearing D. is fitted into an iron socket, and in case of wear can be adjusted by the large end-screw. It will be

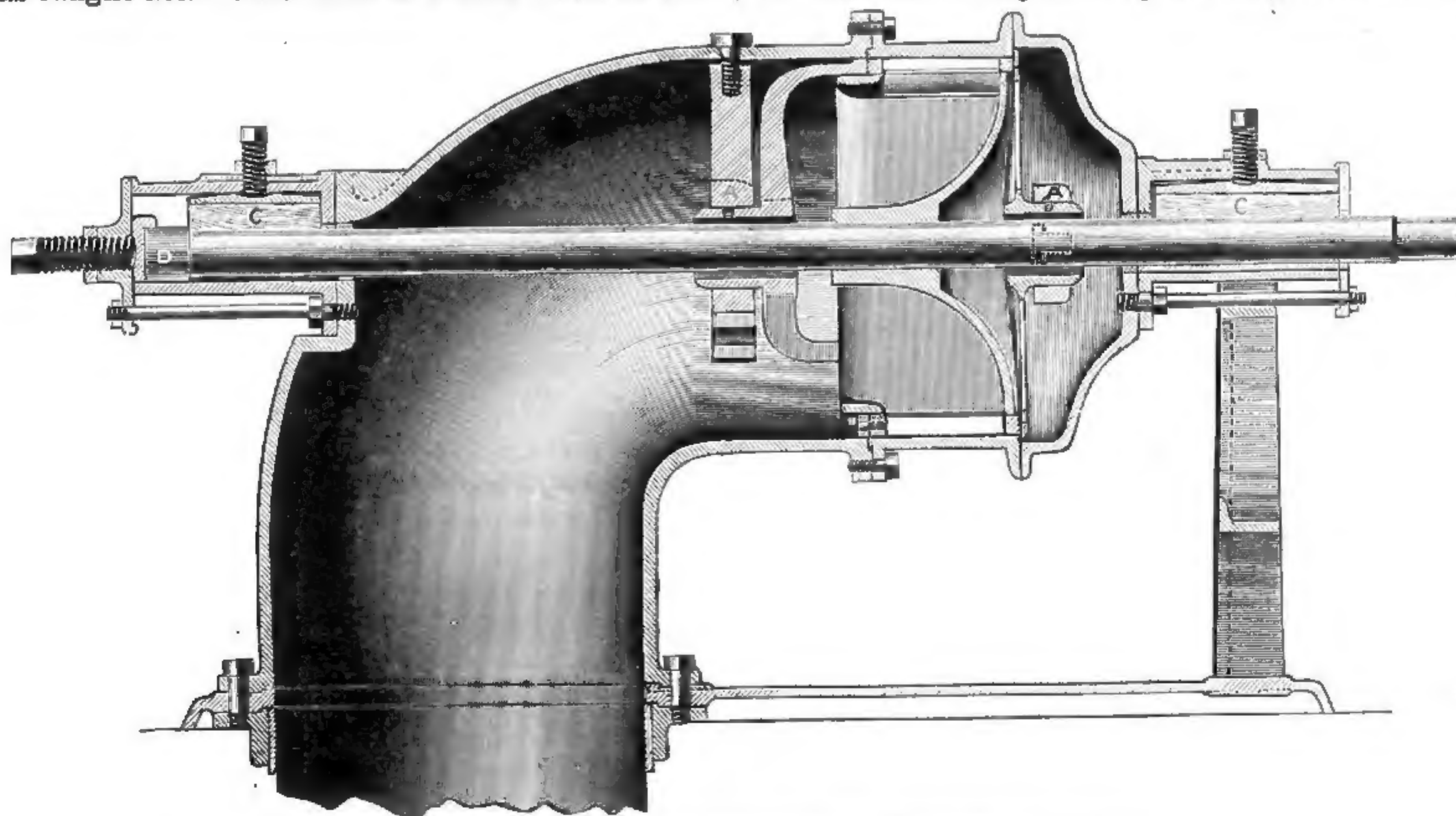


PLATE 2.—LONGITUDINAL SECTION OF THE "STANDARD" TURBINE.

structed so that they will continue to operate for years without repairs, as there is no other piece of machinery that has so little attention after put in operation. Plate No. 1 represents wheel complete, ready to place in the iron or wooden penstock, and is more convenient and less expensive for running machinery, driven from a horizontal shaft, than by bevel-gear from a vertical shaft turbine wheel. Plate No. 2 is a longitudinal section cut of Plate No. 1 and plainly shows the arrangement and operation of the several parts. The wheel, proper, above the lower set of arms in the draft tube

seen that if readjustment of any of the different parts of this wheel are required it is done from the outside of the complete wheel. By the use of the Burnham inventions it is impossible for the gate to rub any part of the case, and, as the gate is balanced after it is hung on its journals, makes it the easiest operated gate known. Another very important feature of these inventions is the self-lubricating bearings. The horizontal bearings are five to six times longer than the diameter of the shaft, and the end one has more wearing surface than a step under a vertical shaft wheel of the same

size; and, as the weight of wheel and shaft rests upon the horizontal bearings, the end bearing has only the friction caused by the suction of draft tube, which is much less than on a vertical shaft wheel-step, in a draft-tube. Various kinds of bearings have been used to overcome the thrust of the shaft endways, but the unskilled manufacturers of them have failed to discover their defects. Address the manufacturers for their latest illustrated catalogue.

JUDGE BLODGETT'S DECISION.

Following is the full text of Judge Blodgett's decision on the roller-mill patent suit of the Consolidated Roller Mill Company against the Barnard and Leas Manufacturing Company, rendered February 10, 1890, in the United States Circuit Court for the Northern District of Illinois:

The bill in this case, as amended, charges the infringement by defendant of patent No. 222,895, granted December 23, 1879, to William D. Gray for "an improvement in roller grinding mills," "patent No. 238,677, granted March 8, 1881, to the said Gray for a roller-mill for grinding grain." Re-issued patent No. 10,139, granted June 20, 1882, to U. H. Odell for a "roller-mill," the original of said last named patent having been granted December 13, 1881, and patent No. 269,623, granted December 26, 1882, to Hans Birkholz for a "roller grinding mill." While the bill charges infringement of each of these several patents in general terms, the complainant's proof limits the charge to the infringement of the fourth, fifth and sixth claims of Gray's patent No. 222,895. Second and third claims of Grays' patent No. 238,667. Second claim of Odell's re-issued patent No. 10,139. First claim of Birkholz's patent 269,623. All these patents are intended to be applied to machinery for the purpose of grinding grain by means of rollers in place of millstones, introduced into this country at a comparatively recent date.

It is conceded that the process of grinding grain by means of rollers as a substitute for the immemorial millstones originated in Europe, and that the devices therefor had been brought to an approximately successful operation long before they were adopted in the United States, hence all the patents in question here are for what are claimed to be improvements on the roller-mills of Europe as our manufacturers found them developed and in use there. The Gray patent No. 222,895, granted December, 1879, is said in the specifications to relate to roller grinding-mills and to consist of a peculiar construction and arrangement of devices for adjusting the rolls vertically as well as horizontally, whereby any unevenness in the wear of the rolls, or their journals or parts, may be compensated for, and the grinding or crushing surfaces kept exactly in line. The invention also consists in the device for separating the rolls when not in action without disturbing their parallelism. Only those portions of the devices covered by this patent, which provide for the lateral adjustment of the surfaces of the rolls, so as to secure the parallelism of their surfaces, and which provide for the separating of the rolls from their working position without disturbing their parallelism, and the feature which regulates the working pressure of the rolls, are in question here. The proof shows that it was common in the European roller-mills, before Gray's device was produced, to secure this element of adjustability by setting one of the rollers in fixed journals, while the other roller was set in a movable sliding frame, so as to be capable of such vertical and horizontal movement as to allow the requisite vertical and horizontal adjustments. Finding the mechanism in this stage of development, that is, with one movable roller, and without considering for the present any of the devices older than Gray's for securing the desired parallelism of the surface of the rollers, Gray by this patent secured this adjustment of parallelism of surface by means of two rods G extending horizontally from the ends of the fixed roller frame to the swinging frame which holds the movable roller. And these rods, being screw-threaded at some distance on each end, allowed the desired adjustment for parallelism to be made by manipulating nuts upon these ends so as to draw and hold the movable rolls into the right relation to the surface of the fixed roller, and in order to allow the movable roller to yield or give way in case a hard substance like a wire, nail or gravel stone should get between the grinding surfaces, spiral springs are interposed between the bearings of this roll upon these adjusting-rods and the point where they are attached to the swinging frame.

It had also been found in practical use before Gray entered the field that, when the mill was stopped with some grain yet in the hopper, the grain would fall into the space between the rolls where it would rest and act as a wedge or brake greatly to retard if not prevent the starting of the mill again, and provision is therefore made for separating the rolls without disturbing their grinding adjustment for parallelism by means of nuts upon the threaded ends of the rods G, where they are attached to the frame which holds the stationary

roller, or by cams of eccentrics working upon the ends of these adjusting-rods. These features of the patent are covered by the fourth, fifth and sixth claims, which are: 4. In combination with the movable roller bearing, the rod G, adjustable stop devices to limit the inward movement of the bearing, an outside spring urging the bearing inward, and adjusting devices, substantially such as shown to regulate the tension of the spring. 5. In combination with the roller bearing, the adjusting-rod provided at one end with a stop to limit the inward movement, a spring, and means for adjusting the latter, and provided at the other end with a stop and holding devices, substantially as shown and described. 6. The combination of the bearing D, rod G, nut L, spring H, nut y, stop n and nut o.

The feature of the Gray patent No. 238,677 which is in controversy here is the provision for working the eccentrics to which the ends of the rod G of the first mentioned patent are attached, where those rods are fastened to the frame, which holds the stationary roll, by means of the rod or shaft which connects the two eccentrics and enables the operator to work these two eccentrics by one movement of this connecting-rod, so that both the rods G are equally extended or shortened by the motion of this rod, thereby throwing the rolls apart, so that the grain may drop through between them without wedging the rolls when the mill stops and drawing them together again in their grinding position when the mill is put in motion, instead of requiring the operator to manipulate separately the nut or cam on the end of each rod G for such purpose. These characteristics of this patent are covered by the second and third claims, which are: 2. In combination with the swinging roll supports E, and the rods G, connected thereto, the eccentrics H, shafts I, and rod K. 3. In combination with the movable roll supports E, rods G, adjustably connected thereto, a transverse shaft I, provided with two eccentrics connected to the rods G at opposite ends of one roll, whereby the roll may be thrown into and out of action instantly without changing the adjusting devices.

The feature of the re-issued Odell patent No. 10,139, in controversy here is a device for throwing the two sets of rolls in a double roller-mill apart from their grinding position and bringing them together again by the movement of a single lever or bar. This lever is so arranged as to work simultaneously with the rod or cams of the rods G, or their equivalents in the first Gray patent, and this feature of the patent is covered by the second claim, which is: "2. In a roller-mill, the combination, with the adjustable rolls and journals of transverse shafts $\frac{1}{2}$, a through shaft J, link mechanism connecting the said shafts, and a single hand-lever K, connected with the through shaft, for simultaneously adjusting both sets of rolls by a single lever movement, substantially as described."

The Birkholz patent, No. 269,623, as far as in question here, shows a frame having a fixed or stationary roller, with a swinging frame, or casing, pivoted to the fixed frame carrying the other roller, and a transverse rod like Gray's rod G, whereby the distance of the roller and swinging frame, or movable roller, from the fixed roller can be adjusted by means of nuts working on this rod and a spring at one end of the rod to relieve the rolls in case any unusually hard substance comes between them. This feature is covered by the first claim of the patent, which is: 1. The combination substantially as before set forth, of the fixed roller-supporting standard, the movable roller-carrying casing pivoted thereto, the adjustable gage-rod, the nut thereof, held by the standard, and the spring connected with said rod and adjustable in tension independently thereof.

The defenses insisted upon are: 1. Want of patentable novelty in the claims of which infringement is charged. 2. That the defendant does not infringe.

I have already said that when Gray entered the art he found already there methods of adjusting the rolls so as to bring their axes into the same horizontal plane, and methods of adjusting the parallelism of the surface of the rolls. I may add he found also methods of separating the rolls so that they would not bind or be wedged by the grain dropping between them when the rollers were at rest, which separation did not disturb their parallelism, and the material questions are whether Gray's mode of securing these several adjustments are new in the art, and if they are found so, then whether the defendant has copied Gray or the older machines. I do not deem it necessary to analyze all the prior devices put in evidence by the defendant, and which it is claimed show the same adjustments accomplished prior to Gray's invention by other inventors, it being, as I think, sufficient to consider the Nemelka-Austrian patent and the Nemelka-French patent of 1875, and the Nemelka-Lake-English patent of 1877, together with some casual reference to the other patents and descriptions found in the record.

Gray, in his first patent, provided for four adjustments, or what may be called adjustments. First, the vertical adjustment, which was intended to bring the axes of the rolls into the same horizontal plane, which is not in question here. Second, the adjustment of the surface of the rolls to parallelism, that is, bringing their grinding surfaces parallel to

each other, so that they would grind uniformly their entire length. This is called "tramming" in the proofs, the word being imported into this art of milling from the older art of grinding with millstones, where it was necessary to bring the grinding surfaces of the stones into perfect parallelism with each other in order that they might grind uniformly all the grain that passed between them. Third, the device for spreading the rolls apart, or throwing them out of working position, to prevent their becoming wedged, or bound, by the grain dropping between them, without disturbing their adjustment for parallelism or their vertical adjustment. Fourth, and adjusting the pressure of the spring so as to hold the rollers with sufficient rigidity together for the purpose of grinding, and at the same time allowing them to yield when any unusually or unexpectedly hard substance should come between them. And the devices of his patent which are here brought in question all have reference to these adjustments.

An examination of the Nemelka devices, as exhibited in his Austrian and French patents, and in the English patent to Lake, and in the model of the French-Nemelka patent, which is before the court and was used upon the hearing, shows that each of these adjustments is provided for in those patents, and by substantially the same instrumentality which were adopted by Gray, although somewhat differently placed or modified. For illustration, Gray provided for the vertical adjustment by a cam, or eccentric, working upon the pivot by which the swinging arm carrying the movable roller was attached to the frame, while Nemelka accomplished his vertical adjustment by a screw worked by a worm, which for the purpose of the question here must, I think, be considered the equivalent of Gray's cam, or eccentric. Nemelka also showed a swinging frame carrying a movable roller, with a cam working upon the pivot by which the swinging frame was fastened to the fixed frame, by means of which the rolls could be separated without disturbing their parallelism, and a provision for adjusting the rollers to parallelism by sliding the pivot attachment upon the fixed frame. He also shows a spring to hold the movable roll to its grinding position and pressure, with means for regulating the pressure of the spring and the grinding distance by means of cams, screws and nuts, and I can not resist the conclusion that all which Gray did by his first patent under consideration was to secure the same adjustments which are shown in these prior machines by, in many respects, the same instrumentality, but differently located, or well-known equivalents of such instrumentalities.

The especial feature of Gray's second patent by which his two rods G are moved inwardly and outwardly by the operation of the cam to which they are connected at their inner ends, whereby the rolls are thrown apart without disturbing their grinding adjustment, is also shown in the Nemelka-French patent, and it is there accomplished by the use of cams not working upon the ends of transverse rods like Gray's rods G, but working upon the pivots by which the swinging frame is pivoted to the fixed frame, these cams being connected so that they were operated simultaneously by a movement of this shaft. So that I find in these older devices all that is covered by the two patents to Gray.

The Odell patent shows only a device for separating the two sets of rolls of the double roller-mill by one movement, and I am compelled to say that I can not conceive that it required invention to connect the shaft by which the cams in one movable roll were operated simultaneously with the cams of the other movable roll in a double mill. The ordinary and well-known device by which all the bolts in an iron safe door are shot by the movements of a single lever seems to me fully to anticipate whatever there is in the first claim of this Odell patent, all which is fully explained by the testimony of defendant's expert witness.

The Birkholz patent seems to me to be only another form of Gray's first patent. I see nothing in his connecting his swinging frame by his rod F, essentially to differentiate that device from the device shown in the first and second patents of Gray, except that he shows only one rod and locates that below the rolls instead of above, which does not seem to me to be a patentable difference. But if there were room for doubt in the question, whether there is any patentable difference in the devices of Gray and of Birkholz, I shall be constrained to find from the proof that the defendant does not infringe this patent, as I can find nothing in the defendants' structure which corresponds to the rod F, either in function or location. I will say further that, if I deemed it necessary to enter upon that field of the case, I think it is fully demonstrated from the defendant's proof that the defendant's devices for securing the adjustments in their mills, substantially the same as are secured by Gray, so far differ from Gray's as that no infringement can be charged against the defendant. The defendant's mill No. 2 contains a swinging frame carrying the movable roll, but does not contain the rod G, of the Gray patent with the cam operating upon the end of it, and does not secure the spring pressure to hold the roll in working position by a spring located upon such rod. The defendant secures the movement of separating its rolls

without disturbing their parallel or vertical adjustment by a cam located in the pivot by which the swinging arm is attached to the frame, while Gray gets his movement by what is practically the elongation of his rods G, by means of the cams at their ends.

I have been very much embarrassed in the examination of this case by the opinion of the learned judge of the Eastern District of Michigan, in the case of this complainant against Coombs, reported in 39 Fed. Rep., 25, decided in May last. I have carefully examined that opinion and the proofs which were submitted to the court in the case, sincerely hoping that I might be enabled to arrive at the same conclusion with the learned judge who tried that case, as I think no one is more anxious than myself to preserve and act upon the rule of comity, which, it seems to me, should prevail between the Federal courts in cases involving the same patents, but after mature and careful consideration I feel constrained to say that my reading of the prior art satisfies me that Mr. Gray in effect invented nothing. He merely adopted well-known equivalents for the mechanism known and shown in the prior art for producing the same adjustments which are secured by his machine, and operating in substantially the same way. And I do not see that Gray, from the proof before me, has any right to be claimed as an original inventor and entitled to invoke the doctrine of equivalents in regard to his mechanism in any respect. He came into the art at so late a date, and when others had covered the same ground which he attempted to cover, that, if his patents are to be sustained at all, they are to be sustained only for the special devices which he shows, and which I am clear the defendant in this case does not infringe.

I may further say upon this point that the rule of comity, perhaps, ought not to be invoked by the complainant here to the same extent as in most cases where it has been applied, for the reason that in the case of this complainant against Freeman, heard before the learned district judge of the Western District of Wisconsin, several years since, that court, upon the testimony, which is now before this court, in these French and English patents, held that Gray's patent was invalid for want of novelty, and dismissed that case. So that we have here a decision in this circuit against the complainant pressing with equal binding force upon us as does the decision relied upon by the complainant from the Eastern District of Michigan. The bill is dismissed for want of equity.

MILLING PATENTS.

Among the patents granted February 25, 1890, are the following:

Cyrenius Dominy, Englewood, Ill., No. 421,912, automatic grain-scales.

Chas. F. Walters and Peter Shellenback, Richmond, Ind., No. 421,996, a roller-mill, containing the combination, with the casing or support, the spring-arms having bearings in opposite ends and fastened at their centers to the casing or support, and the stationary or non-yielding rolls mounted in said bearings, of the spring-arms fastened at their centers to the casing or support and having bearings in the ends, the adjustable or yielding rolls mounted in said bearings, and devices, substantially as described, for adjusting said rolls toward the fixed rolls against the tension of the spring-arms.

Chas. Oath, jr., Mount Vernon, Ind., No. 422,035, a corn-sheller, containing the combination, with the casing, of the concave arranged transversely in said casing and having an enlarged end registering with a feed opening in one side of the casing, the other end of said concave being closed by the opposite side of said casing, said concave being provided in its rear side with a discharge-opening, at the upper edge of which is hinged a door normally closed, but adapted to be forced open automatically by the pressure of the cobs against the inner side of said door.

Heman W. Stone, jr., Morris, Minn., No. 422,043, a shaking-bolt, containing the combination of the sieve, the means for imparting a reciprocating motion to the sieve, a heavy spring or cushion to receive the thrust of the sieve-actuating means at the end of the stroke carrying the sieve in the direction in which the grain is moving, and a light, weaker, and more yielding spring or cushion to receive the opposite thrust.

Wm. H. Cummings, Chicago, Ill., No. 422,123, a grain-shoveling apparatus.

James Jones and Aldred J. Jones, Thorold, Ont., Canada, No. 422,223, a grinding-mill, containing the combination of the adjustable frames, the corrugated roller, and the roller having ratchet-furrows carried by the frame, the stationary

grooved roller between said roller, the grooved or corrugated plate below the roller having the ratchet-shaped furrows, the perforated skirt on one side of the said plate, and the spout having the perforated side on the other side of the plate.

COTEMPORARY COMMENT.

There seems to be a disposition to try to force the flour market into greater activity by working up the price of spot wheat. It is said of shiftless farmers that their cattle have to be lifted in the spring through pulling them up by the tail. Whether flour can be worked up a notch in price or forced into more rapid consumption by the similar method of advancing the price of spot wheat, it would seem has been too often tried to leave that problem in the experimental stage.

—Minneapolis "Market Record."

Messrs. Leventon & Co., of Liverpool, have just received from Egypt a consignment of nineteen tons of embalmed cats, which are to be used as manure.—*Evening Post*. That settles it. Now that a new use has been found for cats besides catching mice and supplying back-yard music, it is to be hoped that this much abused animal will be properly appreciated and treated more felinely hereafter. By the way, how would it do to embalm a few bulls on grain to display as freaks in the future?—*New York "Produce Exchange Reporter."*

The wheat crop of 1889 was officially reported as 490,000,000 bushels, which figures must be accepted as data for basing calculations as to supply until they can be set aside by positive evidence. It is widely believed that the 1889 crop was overestimated, and if this should prove to be the case there would be a correspondingly smaller quantity of surplus.—*Cincinnati "Price Current."*

BOOKS AND PAMPHLETS.

Good Housekeeping's bill of fare for the issue of March 1 is a tempting literary feast. Some of the most noticeable articles are: "The Etiquette of Dining and Dinner Giving," by George W. Childs and Hester M. Poole; "Dining at the White House," by Lucy Page Stelle; "Mistress and Maid," "Quaker Housekeeping—in the Sick Room," by Rachel Macy; "Family Sewing," by Harriet Esterly Weston; "Cook Book Lore," by Leslie Stone; "Macaroni and How to Cook It," by Marie Gozzaldi; "Woman's Work and Wages," by Helen Campbell, and interesting and pleasant sayings and doings in the departments: "The Cozy Corner," "Quiet Hours with the Quick Witted," "Editor's Portfolio," "Home Correspondence," and "Fugitive Verse," as well as some choice poems and selected reading.

The March Century. The most striking pictures which have appeared in the Joseph Jefferson Autobiography accompany the present installment. The frontispiece is a full-length portrait of Jefferson as Dr. Pangloss, there being six large portraits, in various characters. A portrait of Sothorn

as Lord Dundreary, and one of Laura Keane, are also given. Jefferson tells for the first time of the great success of "Our American Cousin," in which he created the famous character of Asa Trenchard, and Mr. Sothorn that of Lord Dundreary. Three very timely and important subjects are treated in the *March Century* by specialists. The first is the subject of Municipal Government, Dr. Albert Shaw, describing the workings of the local government of Glasgow. The subject of Irrigation is treated in the first of a series of three articles by professor Powell, the Director of the United States Geological Survey. The third great subject is discussed in a paper by professor Fisher on "The Nature and Method of Revelation." The same number of *The Century* has editorials on "Municipal Government," "Our Sins Against France," and "University Extension." This number is also notable for the beginning of the most authentic and original account yet published of the "Prehistoric Remains in the Ohio Valley." In the next number of *The Century* Professor Putnam will describe the famous "Serpent Mound." The current number contains also the artist La Farge's second group of illustrated "Letters from Japan"; an article on "Gloucester Cathedral" by Mrs. Van Rensselaer, with pictures by Joseph Pennell, and an article by Mr. Wilson, the photographer, depicting "Some Wayside Places in Palestine," which are referred to in current International Sunday-School Questions; also a striking paper on "The Sun-Dance of the Sioux," by Frederick Schwatka, and a curious study by Professor Wood of Philadelphia, on the subject of "Memory." The following are the contributions in fiction: Mrs. Barr's "Friend Olivia," the conclusion of Mr. Stockton's "Merry Chatter"; a story by James Lane Allen called "Posthumous Fame; or a Legend on the Beautiful"; another by Richard Malcom Johnston, "The Self-Protection of Mr. Littleberry Roach," and the "Last Marchbanks" by Miss Roseboro'. Professor Boyesen writes about Henrik Ibsen, William Nelson about "Bloodhounds and Slaves"; and there are letters on "The Evolution of the Educator," and "The Pardoning Power." Colonel Benedict furnishes a memorandum on "The Builders of the First Monitor"; and the poems are by William Wilfred Campbell, the Canadian poet; Colonel Meredith, George Parsons Lathrop, Professor Roberts of Canada, and others.

SPECIAL NOTICES.

BOLTING CLOTH.

Do not order your cloth until you have conferred with us. It will pay you, both in point of quality and price. We are prepared with special facilities for this work. Write us before you order.

CASE MANUFACTURING CO.,
Columbus, Ohio.

Office and Factory, 5th Street, north of Naughten.

TOLEDO MILL PICKS AND STONE TOOL MFG. CO.

Manufacturer

and Dresser of

MILL PICKS.

Made of the best double-refined English cast steel. All work guaranteed. For terms and warranty, address, GEO. W. HEARTLEY, No. 297 St. Clair Street, Toledo, Ohio. Send for Circular.

N. B.—All Mill Picks ground and ready for use (both old and new) before leaving the shop. No time and money lost grinding rough and newly dressed Picks. All come to hand ready for use.

ALSO MANUFACTURERS OF

Shafting, Pulleys, Hangers, Coupling, Machine and Jobbing, Etc., Etc.

THIS SPACE BELONGS TO
MUNSON BROS., UTICA, N. Y.

—MANUFACTURERS OF—

**Portable Mills, for Corn and Feed Grinding,
WITH FRENCH BUHR STONES.**

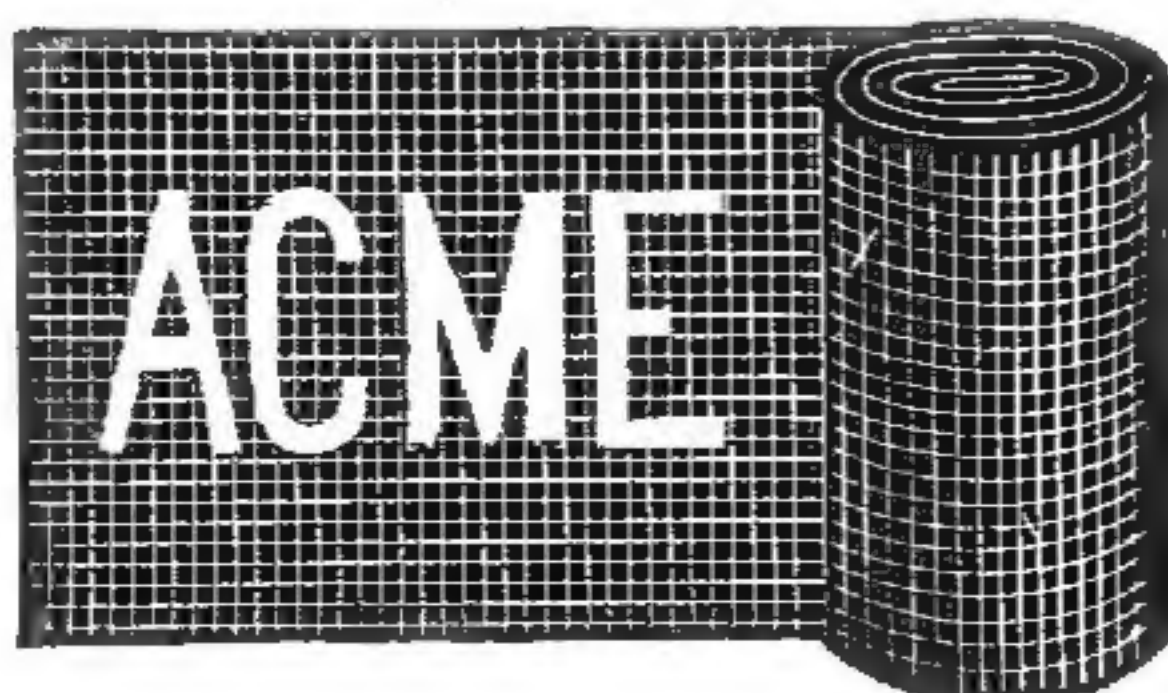
Write for Descriptive Circulars and Price Lists.

L. L. WHITLOCK,
Advertising Agent

FOR MANUFACTURERS.
TRADE JOURNALS A SPECIALTY.

P. O. DRAWER 5323. *Boston, Mass.*

As Agent for Advertisers instead of Papers, I obtain
the Best Rates Possible for my Customers.



WHEN YOU WANT
WIRE CLOTH

SEND TO
Brooklyn Wire Cloth Works,
107 JOHN STREET, NEW YORK.



A ROPE THAT WILL FLOAT.—A cork core floating rope has been invented. The inventor claims that his floating rope of one inch thickness will stand a strain of more than 1,000 pounds. The rope consists of a core of small round corks about three quarters of an inch long, placed end to end, around which is braided a network of cotton twine. This is surrounded by another layer of strong cotton twine, braided in heavy strands, which is about a quarter of an inch thick. The rope is very soft and pliable, and even after being tied into a small knot will return to its original shape. It can be used in life lines on life rafts, and as a heaving line to tie heavy hawsers to. At a life-saving station such a rope would be very valuable.

GENERAL NOTES.

THE public debt of France is estimated at \$6,200,000,000, making it the heaviest of any country in Europe. To add to the burden, the expenses for the present year are set down at \$700,000,000 and the revenue at only \$600,000,000; and the Government has been forced to fund the accumulated deficits in a new loan for \$200,000,000. More than one-half of the taxation in France goes to the support of the army and navy, and the poorest peasant has always been willing to pay it; but an annual decrease in revenue, increased taxation and new loans will unquestionably tend to injure the industries of the country.

THE SCALPERS.

J. MURRAY CASE.

VI.

The matter of the proper scalping of the different products is of so much importance to successful milling, and has been written upon so little, that I have decided to give it further consideration. The prime object of scalping is to separate products that are not adapted to being ground or bolted together. We scalp the breaks because we want the middlings out before further reductions; we scalp the "break-chop" because we want to separate the coarse from the fine products before making flour; we scalp the germ and branny stock because we want the flour-producing parts removed from the offal; and every scalping that will operate to make these separations will tend to secure higher results. We may therefore say that when in connection with the break-scalpers a system of pneumatic sorters is used, it insures, especially in long-break mills, a very preceptible improvement.

This is apparent from the fact that by this means the lighter bran products are delivered further towards the tail, or finishing breaks, and therefore are operated upon a less number of times, thus carrying out in another form the principles embodied in the short-break system. Besides this separation of the products into classes corresponding with their gravity, there is also the important advantage of delivering the small pieces of clipped wheat lower down the breaks, where the wire-scalper is of finer mesh, and consequently we have removed from the break-chop a larger proportion of this bran product. The system also has the advantage of removing a portion of the bran fiber and thin skins of bran which, in the successive reductions, might become chopped up to a considerable degree and thus injure the general results. The system is based upon scientific principles, but in short-break mills the benefits would not be so apparent, and probably in one, two and three break plants the advantages would not, as a rule, justify the additional outlay.

After passing the break-scalpers, the other points in the mill where scalpers are used to advantage are the bran-reel,

the low grade reels and germ-scalper. The flour, or scalper product from the bran reel, should never be intermingled with break-chop, except in very short mills where a straight grade of flour is made. This reel should make not less than four separations; a separation at the head through, say No. 7, 8 or 9 cloth, according to length of reel, which product should be re-dressed on a centrifugal. The next mesh in ordinary grinding may be No. 2, which will pass all middlings suitable for sending to the second grade purifier; this may be followed by a coarser number, which will pass a quantity of flattened material, suitable to be handled with the second germ or product passing over the germ-scalper.

Right here we may remark that it is not unfrequent, in fact is very common, after having separated this branny product, again to intermingle it with granular stock, such as the tail-sheet of second middlings, rich tailings from purifiers handling pure stock, etc. This should never be done. Rule: When you have once made a separation of bran and second germ products, never mix them with granular stock. This very common fact is costing millers a very large amount of money. The object of scalping and separating these different products is to prevent this; and if when once separated we again commingle them, we defeat the very object aimed at.

While it has not been the general custom, either in Europe or America, to use double conveyors on the break-scalpers, yet I believe the advanced experience in milling will ultimately recognize the double conveyor as of equal necessity in scalping with any other place in the mill, for the reason that we are here making separations, and we should be enabled to control these separations perfectly upon all classes of wheat. If each break-scalper had a "cut-off" and double conveyor at the point where the product was fully scalped, which at times is not over half the length of the scalper, and from there on nothing bolt but bran chips, we could control this, and send the bran-chips to a special reduction; we would have a better break-chop, and this statement applies to the germ and low-grade scalpers as well.

To equip a mill of eight sacks per hour with all its scalping arrangements, I would suggest the following programme: Assuming four breaks to be the number used, I would employ for them three inter-elevator scalpers 8 feet long and 24 inches diameter, for first, second and third breaks. This size scalper has about one-third more capacity than is absolutely necessary, but with very damp wheat the whole would be required. The lower conveyor of these three scalpers I would spout to a specially corrugated roll, made with cut and differential specially suited to handle these bran-chips which pass the meshes beyond the cut-offs in the scalpers. I would use a fourth scalper of the same size to scalp this special reduction. The head of this scalper I would send to the break-chop, and the tail or cut-off to the second grade purifier. I would use a fifth scalper of the same size for the rolled germ. The head of this I would send to break-chop, and tail on a cut-off to the second grade purifier.

We have thus centralized all the good stock in the mill, and it has been manipulated in such a manner that the break-flour will only be a shade below the patent. I would then use a 6-scalper, inter-elevator bolt, 14 feet long, for the bran, making four separations, as I have before specified. I would use a 7-scalper, inter-elevator bolt, 14 feet long, for separating the break-chop and middlings. These separations all having been made scientifically, the balance of the milling becomes easy, the principle object to bear in mind being not to permit the branny substances again to become intermingled with the middlings; they have all been separated, keep them so.—*London "Millers' Gazette."*

CABLE advices recently received in England confirm reports as to the disappointing wheat harvest in Australia. The yield is smaller than expected; several ships intended for wheat have been re-chartered to load nitrate from Chili.

AS AT present constituted, the duties on cereals represent figures which are very important in relation to the value of

taxed articles. Germany raises on wheat and rye a duty equivalent to 10s. 7d. per quarter; the duty is 4s. 6d. for oats and 4s. 8d. for barley. Compared with the average prices of the bourse of St. Petersburg in 1888, this constitutes a duty "ad valorem" of 42 per cent. for wheat, 65 per

cent. for rye, 56 per cent. for oats, and 22 per cent. for barley. In France the wheat duty is 8s. 3d. per quarter; rye and oats 3s. 3d., and barley 2s. 1d. The Italian duties are 8s. 8d. per quarter for wheat, 4s. 4d. for oats, and 1s. 11d. for rye, and 1s. 11d. for barley.

INSURE IN THE TRADERS & TRAVELERS

Accident Company,
287 BROADWAY, NEW YORK.

BENEFITS.

\$5,000 for Death.
\$5,000 Loss of Limbs.
\$2,500 Loss of Limb.
\$2,500 Loss of Sight.
\$1,250 Total Disability.
\$650 Loss of One Eye.
\$25 Weekly Indemnity for
26 Weeks.
One Set of Individual Registry Plates
Included.

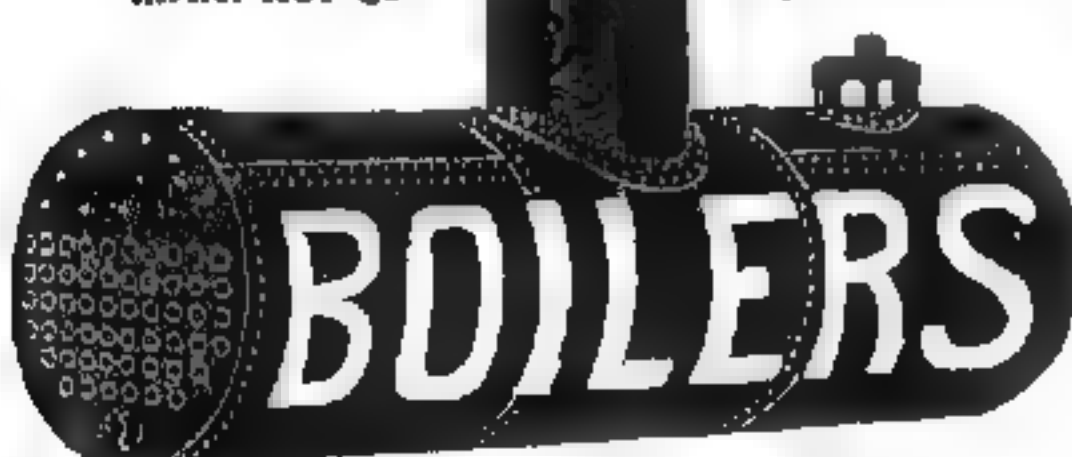
COST.

Four Quarterly Payments, \$10.00
Annual Dues, 1.00
Membership Fee, 5.00. \$11.00

IMPORTANT NOTICE.—The Traders & Travelers Accident Co. of New York desire the services of one responsible representative in each town to act as agent for the general transaction of their business. A liberal and permanent arrangement will be made with parties who can fill the above requirements. Address
C. S. SOMERVILLE, Sec'y.

EAGLE IRON WORKS, DETROIT, MICH.

MANFRS. OF HIGH GRADE



HORIZONTAL, UPRIGHT
PORTABLE AND MARINE.

Oil Tanks & Smoke Stacks,

HEAVY SHEET IRON WORK.

CORRESPONDENCE SOLICITED.

THE INK

WITH WHICH THIS PAPER IS PRINTED
IS MADE BY THE

QUEEN CITY PRINTING INK CO.
CINCINNATI, O.

THE BEST AND CHEAPEST CORN AND COB CRUSHER IN THE WORLD.

All wearing parts cast of a steel mixture. Notice difference in construction. Most area where most work is done, where all other crushers have least area where most work is done. Low priced machinery is not the cheapest, considering durability and efficiency. Sent on 30 days' trial when satisfactory reference is furnished.

Please Send for Circulars.

R. C. McCULLEY, LANCASTER, PENN.

\$15

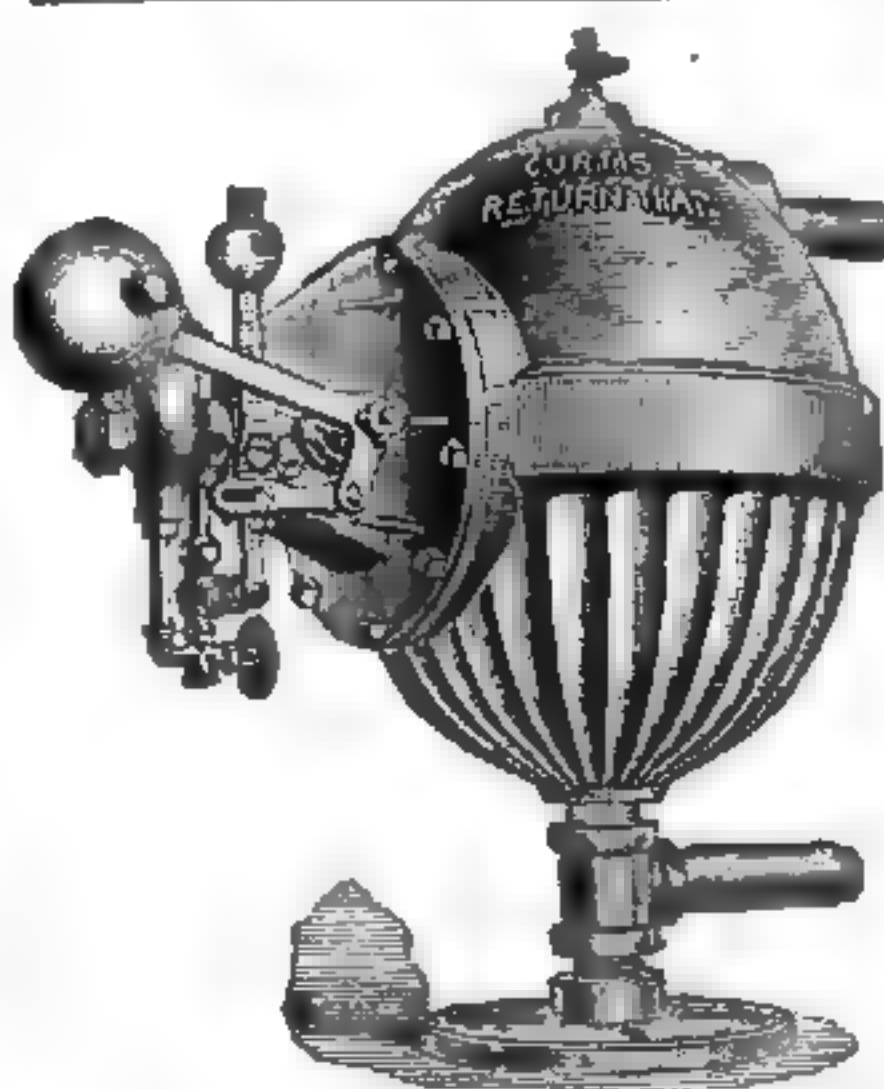
WILL BUY THE BEST AND CHEAPEST
CORN & COB CRUSHER
IN THE WORLD.



Our crushers are made of a "special quality" of material that insures years of service. Thousands of these crushers are in use throughout the United States and Canada. Send for circular, giving testimonials from millers who are using them, and know a good thing when they see it.

T. B. WOOD'S SONS, CHAMBERSBURG, PA.

Manufacturers of
Shafting, Pulleys, Hangers, Mill Gearing, Etc.



THE CURTIS PATENT RETURN STEAM TRAP.

It is noiseless, positive, rapid, will return all condensation back into the boiler, and works equally well in connection with reduced pressure or exhaust steam, also when the return is below the water line of the boiler.

THE CURTIS REGULATOR COMPANY,
NO. 74 BEVERLY ST., BOSTON, MASS.

GENERAL AGENCIES.

New York, 109 Liberty st. Minneapolis, 210 S. Third st.
Philadelphia, 2035 N. Front st. Chicago, 218 Lake st.

The Canton Cabinet Filing Case Company, Canton, Ohio.

MANUFACTURERS OF

The New Buckeye Document Case & Letter File; Also All Kinds Office Furniture

NO. 8 Represents one side of one of our Revolving Cabinet Letter Files and Document Cases Combined. It contains 30 Document Drawers and 1 Letter File Drawers. In filing letters we use first VOWEL of name on front of drawer, and LETTER FOLLOWING first VOWEL on Index Sheet within drawer. We also make more exhaustive systems which contain from 6 to 100 or more Filing Drawers.

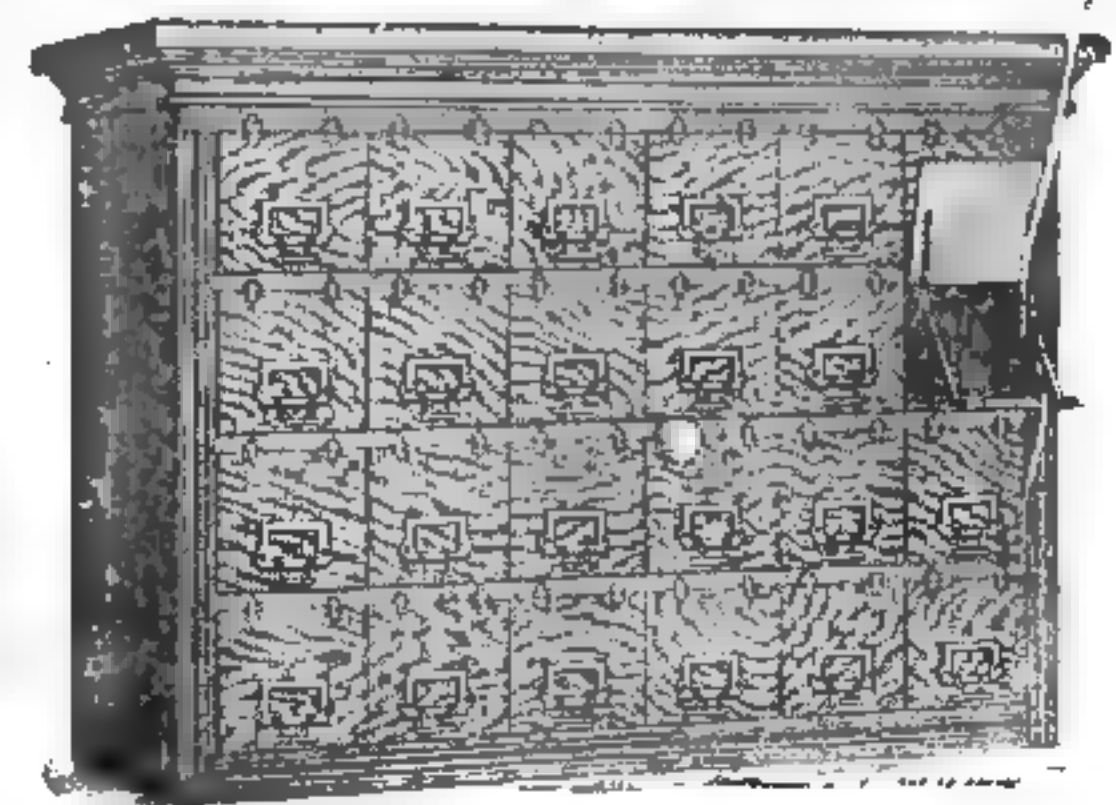
NO. 1 Represents one of our small Document Cabinets, for use on desks or brackets. Action of drawer can be seen in the cut. When front is raised inner drawer comes forward, exposing contents of drawer for inspection.

Our Cabinet Files are Designed to be the Most Convenient of Any in the Market. They are Compact, Simple, Complete, Durable and Ornamental.

SEND FOR PRICE LIST AND CATALOGUE.



NO. 8.



NO. 1.

NOTES AND NEWS

L. R. T. Dixon, Princess Anne, Md., builds a grist-mill.
 A. P. Jones, Cartersville, Ga., wants flouring-machinery.
 Geo. Greenhow, Tallahassee, Fla., will start a grist-mill; machinery is wanted.
 E. E. Cadle, Hephzibah, Ga., wants machinery for grinding flour, corn-meal, corn-cobs and shucks.
 Whitener & Smyer, Hindsville, Ala., will at once rebuild their burned grist-mill; machinery is wanted.
 J. H. Baggett, Douglassville, Ga., will build a flour and corn mill; water-power; machinery is wanted.
 The Case Mfg. Co., Columbus, O., have an order from Wm. Falcun, Salineville, O., for 1 pair of rolls.
 The Case Mfg. Co., Columbus, O., have an order from M. J. Rutherford, Langsville, O., for a Case bran-duster.
 The Vigo Mill Co., Vigo, O., are putting in 2 additional pair of rolls furnished by the Case Mfg. Co., Columbus, O.
 The Case Mfg. Co., Columbus, O., have an order from F. Decker & Son, Warrensburg, Ohio, for 1 Case flour-packer.
 John A. Copeland, Hopedale, O., is putting in an additional pair of rolls furnished by the Case Mfg. Co., Columbus, O.
 H. L. Avery, Hadley, Pa., has placed an order with the Case Mfg. Co., Columbus, O., for 4 pair of rolls, 1 flour-dresser and 1 purifier.
 Wm. Bartley & Son, Bartley, N. J., have placed their order with the Case Mfg. Co., Columbus, O., for 2 purifiers and 6 pair of rolls.
 Signor & Proctor, Washington, Ind., have placed an order for 2 pair of rolls and other machinery with the Case Mfg. Co., Columbus, O.
 Doney & Co., Basil, O., are remodeling their mill and have placed their order for rolls and other machinery with the Case Mfg. Co., Columbus, O.
 The Case Mfg. Co., Columbus, O., have the contract of John Simpson, Bellville, O., for the necessary rolls and other machinery for a full roller mill on the Case system.
 The Case Mfg. Co., Columbus, O., have received the contract of Charles H. Breed, Medina, N. Y., for all the necessary machinery for a full roller mill on the Case short-system.
 A. H. Fairchild & Son, North Bloomfield, N. Y., have placed an order with the Case Mfg. Co., Columbus, O., for 7 pair of rolls, to be placed in the mill they are remodeling for John Morsch, Wayland, N. Y.
 The Case Mfg. Co., Columbus, O., have received the contract of the Equity Milling Co., Point Pleasant, W. Va., for all the necessary rolls, flour-dressers, purifiers and other machinery for a full roller mill on the Case system.
 L. P. Swan, La Crosse, Wis., after operating a Case mill for 4 years, has awarded his contract for a full line of rolls, purifiers, flour-dressers, round scalpers and other machinery for a full roller mill on the Case system, to be built at Champoege, Oregon, to the Case Mfg. Co., Columbus, O.
 The National Pulley Covering Co., of Baltimore, Md., have recently received their second order for covering from the Utica Willowvale Bleaching Co., of Chadwick's Mills, N. Y., and their fifth from the Columbian Iron Works & Dry Dock Co., of Baltimore, for use in their band-saw mill in their wood-shop. This company is desirous of obtaining reliable agents in every city of importance, paying liberal commissions for work done.
 Five years ago Westinghouse, Church, Kerr & Co. established themselves as engineers in New York, occupying a small office on the fifth floor. Their business at that time was confined almost wholly to the handling of the Westinghouse Standard Engine. They were immediately successful from the first and were soon obliged to find enlarged accommodations at 17 Cortland street. This office occupies the entire first floor of the building, and is handsomely fitted up as the headquarters of

the Company. The continuous growth of their business has required the successive establishing of branch offices, first in Pittsburgh and Philadelphia, and later in Boston and Chicago. The office at Chicago is conducted independently of the New York office, and has been equally successful. St. Louis has always been an objective point, about which most of the western trade develops, and on the first of January, 1890, Westinghouse, Church, Kerr & Co. opened their fifth branch office at 511 North Fourth street, St. Louis, from which office the southwestern business will hereafter be handled. The Chicago and St. Louis offices are now controlling all the trade throughout the west and southwest to the Rocky Mountains.

The Northern Indiana Millers' Association held a convention at Fort Wayne, Ind., Feb. 11. The attendance was small. President F. E. C. Hawks, of Goshen, presided. In his address he reviewed the milling interests of 1889, urging organization and union with the Millers' National Association, and touching up railroad and patent "sharks," milling machinery, insurance and wheat-raising. The report of the secretary and treasurer showed \$27.84 in the treasury. David Thompson, of Wabash, read a paper on "Milling as it Was and as It Is Now." Geo. Hawks, of Goshen, sent a paper on "Managing Mill Men." James Charles, of Marion, spoke on "The Inequalities of the Wheat Market." A resolution was adopted favoring the holding of the convention of the millers' associations of Indiana, Michigan and Ohio at Fort Wayne in May next. John Orff spoke on the inconsistencies of the milling business. The election of officers resulted in the choice of the following: President—F. E. C. Hawks, Goshen; vice-president—J. M. Servoss, Milford; treasurer—C. W. Tuttle, Columbia City; secretary—J. B. Monning, Ft. Wayne; Directors—F. E. C. Hawks, Goshen, J. M. Servoss, Milford, C. W. Tuttle, Columbia City, John B. Monning, Ft. Wayne, W. S. Pancoast, Elkhart, David Thompson, Wabash, O. W. Tresselt, Ft. Wayne.

The principal feature of the *Transatlantic* for March is political in its character. In an article on "How Europe may Escape War," Colonel Baron Stoffel, who is an authority in matters military, seriously advances the startling idea of an offensive and defensive alliance between France and Germany as the only method of averting the impending European conflict, and maintains that such an alliance is possible only on condition of the voluntary restoration of Alsace and Lorraine to France by Germany. Incidentally, the author relates an interesting interview with Bismarck, in which the German premier describes the struggle which he passed through to prevent his sovereign from occupying Vienna in 1866. After reading the article, one turns, with interest aroused in advance, to "The Last Lesson; Story of a Little Alsatian," a touching novelette by Alphonse Daudet, based upon the prohibition of the study of French in Alsatian schools. An entire page is given to a collection of nearly forty fac-similes of royal autographs. Henrik Ibsen gives some recollections of his childhood that are not only entertaining, but instructive as explaining his future. Among other literary attractions are some delightful translations of the new odes of Carducci, the Italian poet, and an account of Russia's national opera, "Life for the Czar," by the famous composer, Michel Glinka. A selection from this opera fills two pages of the *Transatlantic*. On the cover appears perhaps the best picture of Robert Browning thus far published. 328 Washington street, Boston. \$2.00 a year.

A NEW METHOD OF TREATING DISEASE.

HOSPITAL REMEDIES.

What are they? There is a new departure in the treatment of disease. It consists in the collection of the specifics used by noted specialists of Europe and America, and bringing them within the reach of all. For instance the treatment pursued by special physicians who treat indigestion, stomach and liver troubles only, was obtained and prepared. The treatment of other physicians, celebrated for curing catarrh was procured, and so on till these incomparable cures now include disease of the lungs, kidneys, female weakness, rheumatism and nervous debility.

This new method of "one remedy for one disease" must appeal to the common sense of all sufferers, many of whom have experienced the ill effects, and thoroughly realize the absurdity of the claims of Patent Medicines which are guaranteed to cure every ill out of a single bottle, and the use of which, as statistics prove, has ruined more stomachs than alcohol. A circular describing these new remedies is sent free on receipt of stamp to pay postage by Hospital Remedy Company, Toronto, Canada, sole proprietors.



W.A. BINGHAM,
 MANUFACTURER OF
FLOUR SACKS.
 178 Duane Street,
 New York.



THE BEST ARE THE CHEAPEST.

New York

MILLERS' FLOUR SACKS A SPECIALTY.

THE PATRONAGE of the MILLING TRADE is MOST RESPECTFULLY SOLICITED.

THE DONNELL CO.

WOOD ENGRAVING LITHOGRAPHY

THE STEVENS PORTABLE MILLS

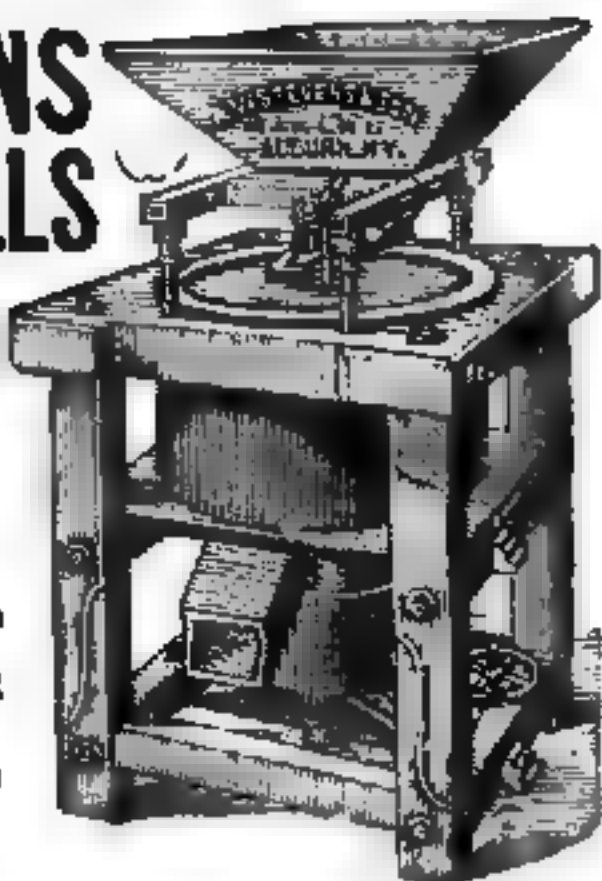
For CORN and FEED GRINDING

Genuine French BUHR STONES

Power Corn Sheller Prices Below the Lowest

A.W. STEVENS & SON 4 AUBURN, N. Y.

Mention this paper



PREJUDICE

Investigate the merits of the Reliance Safety Water Columns. It pays to keep posted. Many of the largest corporations have found it profitable to discard the old appliances and adopt these safeguards. There is always economy in safety. Send for illustrated price-list.

Reliance Gauge Co., 831 Sheriff St., Cleveland, Ohio.

THE "HARLOW" Positive Feed Lubricators.

For Marine and Stationary Engines, Steam Pumps, Electrical and other Machinery.

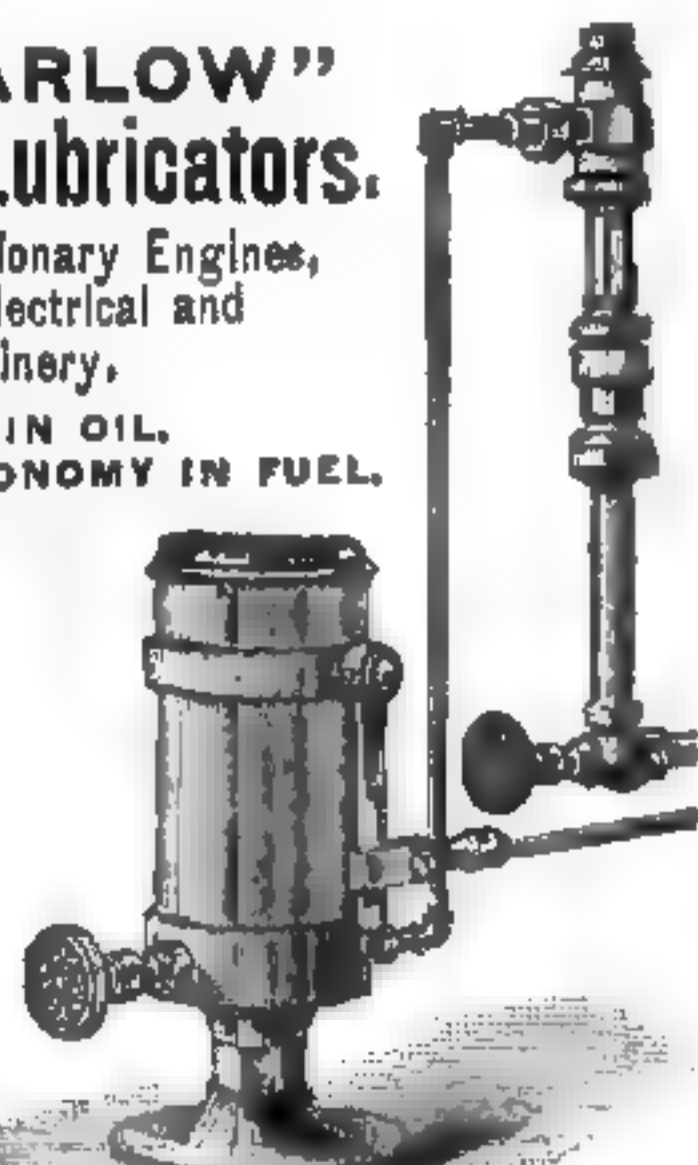
MAXIMUM ECONOMY IN OIL. MARKED ECONOMY IN FUEL.

Not dependent upon or operated by Steam Pressure, Condensation or Gravity.

Not affected by changes of temperature.

BEING operated by some moving portion of the engine or machine to be lubricated, the "Harlow Lubricator" starts and stops with the engine or machine being lubricated, without requiring the slightest attention from the engineer or operator, always delivering the oil in any amount from a drop to a constant stream. The cup can be filled at any moment while the engine or machine being lubricated is in operation, without causing any leakage either of oil or steam.

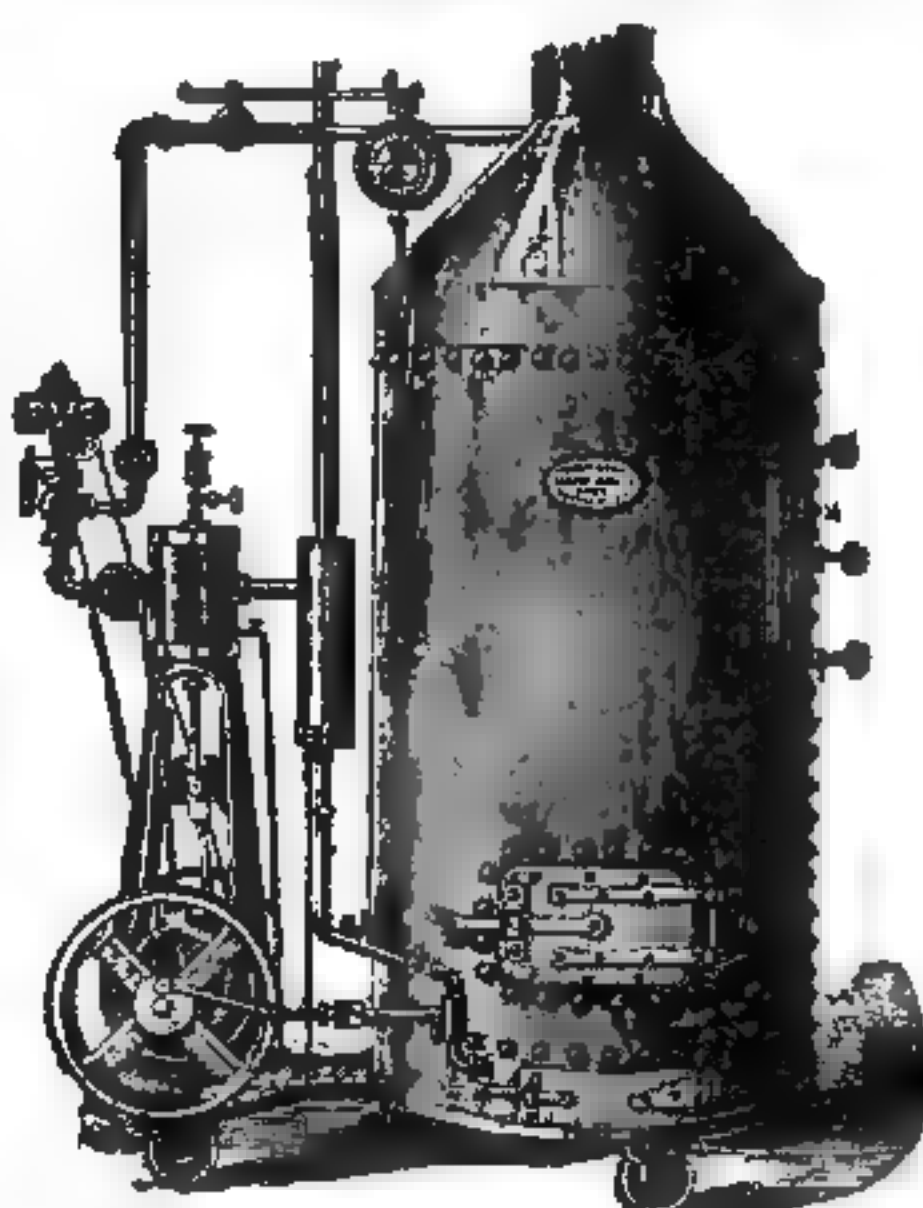
Harlow Lubricator Mfg. Co. BOSTON, Mass. U. S. A.



TONAWANDA ENGINE AND BOILER WORKS

A Large Assortment of Machinery.

The Best 8-Horse Power Semi-Portable Upright Engine and Boiler Made.



SPECIAL PRICE. GUARANTEED.

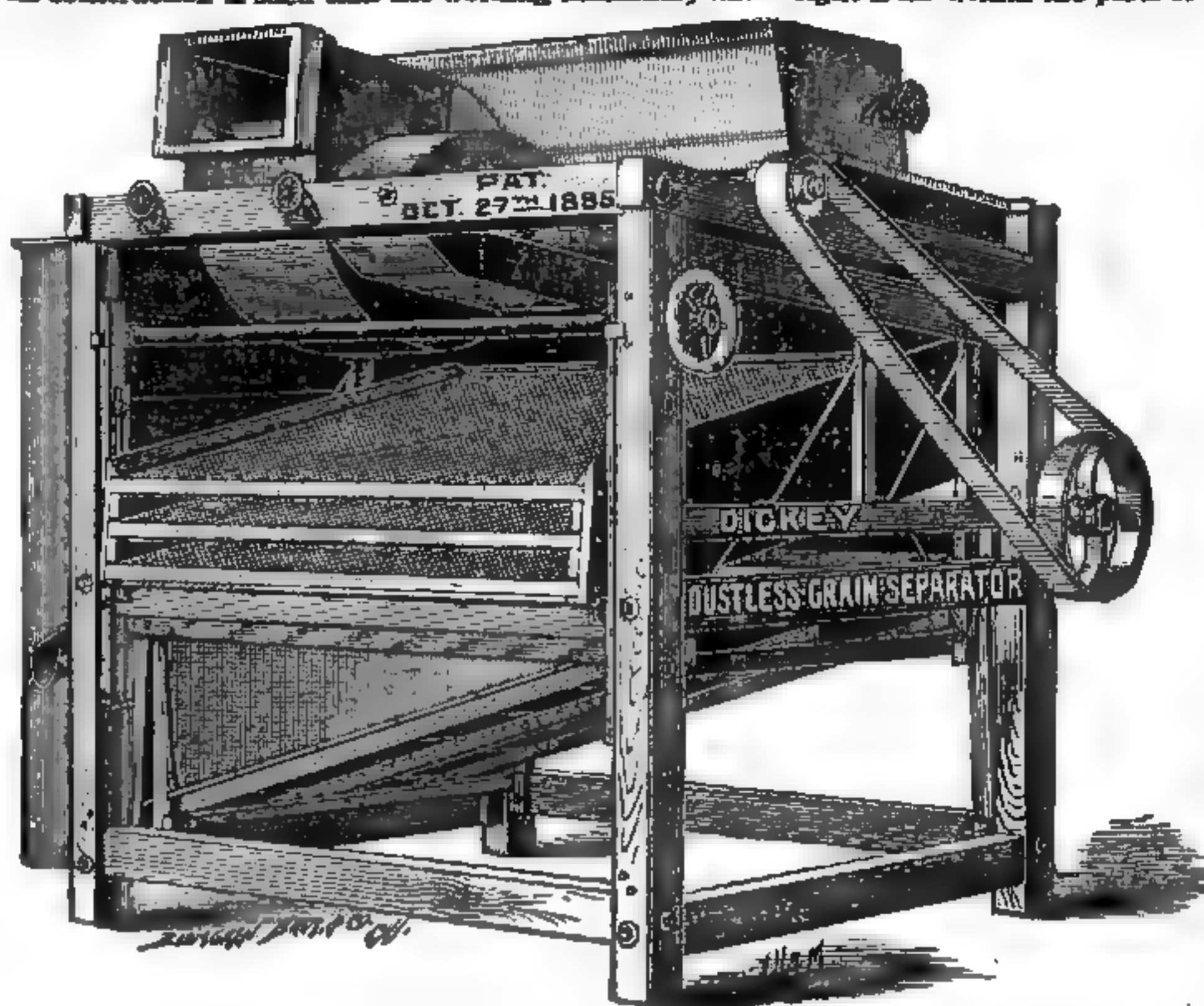
SEND FOR CATALOGUE.

ARMITAGE, HERSCHELL & CO.

Tonawanda N. Y.

DICKEY DUSTLESS GRAIN AND FLAX SEPARATOR

This Separator is our latest and most perfect, and guaranteed to be the superior of any now on the market. This machine, as can be seen by the cut, is not a warehouse fanning mill with one patent attachment, but is Dustless Separator, made for the express purpose of thoroughly cleaning and separating all kinds of grain in large quantities; its construction is such that the working machinery and weight is all within the parts or anchors.



WE CLAIM FOR IT SUPERIORITY.

WE CLAIM FOR IT SUPERIORITY.

We claim for it Superiority over everything of the kind made, in simpleness, durability, saving of power, capacity and cost of construction. Its height will accommodate any number of spouts from different points, without moving machine. They have a capacity from 700 to 1,500 bushels per hour. We also control exclusively the manufacture of the celebrated Dickey Giant, End and Side Shake, Warehouse Mills, that have attained such a world-wide reputation. Sent on approval to any reliable party. For full particulars address,

A. P. DICKEY MANUFACTURING CO., Successors to Dickey & Pease RACINE, WIS.

CORNISH'S (OLD ESTABLISHED) ORGANS AND PIANOS!

THE ONLY FIRM OF MANUFACTURERS IN AMERICA selling direct to Consumer. From Factory to Family at Wholesale Rates on Terms to suit Purchaser.

\$75 ORGAN { EXACTLY LIKE THIS CUT } **\$50**
SOLD FOR **\$15.00 CASH** After ten days' trial, and the balance of price, \$35, to be paid in 7 monthly installments of \$5 each. OR IF CASH IS SENT WITH ORDER, WE WILL SPECIALLY ACCEPT \$45.00.

CORNISH'S Specially designed Cabinet Organ, Style "Canopiletta," No. 10,000, contains 3 sets Orchestral toned Resonatory Pipe Quality Reeds; 5 Octaves; 10 Solo Stops; 2 Octave Couplers (Bass and Treble); 3 Knee Swells and all late improvements. Dimensions, -65 in. high, 48 long, 21 wide.

WARRANTED FOR TEN LONG YEARS.

SOLID WALNUT CASE, HIGHLY FINISHED. Handsome Steel and large Instruction Book, making a Complete Musical Outfit.

HOW TO ORDER. Send a reference as to my banker, Postmaster, Merchant or Express Agt. and Organ will be shipped at once on "Ten Days' Test Trial," and if not, after trial, satisfactory, you can return it and we will pay freight charges both ways. **YOU RUN NO RISK.**



REFERENCES. - FIRST NATIONAL BANK, WASHINGTON, N. J., any Commercial Agency in the U. S., and thousands of persons who for the last 20 years have purchased instruments of our manufacture.

CORNISH'S GRAND, SQUARE PIANOS AND UPRIGHT

Magnificent New Designs, finest materials, wholesale prices, upon terms to suit all purchasers. Shipped to any part of the civilized world, on free test trial.

NO MONEY REQUIRED UNTIL YOU ARE SATISFIED.

We want every reader of this paper to **WRITE TO-DAY** for our 20 pp. Illustrated Catalogue. YOU CAN SAVE MONEY. **WRITE** whether you want to buy now or not. Our Catalogue will interest you and you can get it for nothing.

Address: **CORNISH & CO. (OLD ESTABLISHED) WASHINGTON, AND RELIABLE, NEW JERSEY.**

EUROPEAN ECHOES.

SAYS the London "Miller" of February 10: Australia, in making up its harvest sum, finds the export surplus of wheat will fall short of first estimates, as the crops in their last stages were reduced materially by insect and fungoid attacks. However, with over 100,000 quarters afloat to the United Kingdom, February shipments are likely to be important, if not so large as was lately expected. Value seems stiff, 34s. to 36s. per 480 pounds for parcels and cargoes, and if 35s. be taken as the mean, these figures mean samples in Mark Lane, per 493 pounds, must keep up at 36s. to 38s. Germany finds the stocks of rye are still short, and a further enhancement of price appears probable. For fine Bohemian barley 40s. to 46s. 6d. is still the range, 56 pounds going to the bushel. For best Saale samples, same weight, as much as 46s. to 49s. are the currencies reported. Best sorts of wheat make 40s. to 44s., the Berlin quotation being 44s. 1½d.; for rye, 37s. 11d. The latter, without duty, makes 26s. to 27s. Austria-Hungary, having the navigation of the Danube re-opening, has been weak in value, notwithstanding great scarcity in some districts. Russia sends good accounts of the growing winter wheat, and in spite of the stiffness of money exchange prices for wheat are not so strong as they were recently.

SAYS the London "Miller:" In reference to the subject of the method of culture pursued in regard to Indian wheat by the natives of that great dependency, we have had the privilege of hearing some interesting particulars from the lips of an ex-Indian official, who had ample opportunities for intimately studying the subject in some of the largest wheat-producing areas in all India. While admitting the fact that Indian wheats do certainly reach markets in a highly dirt-loaded condition, he declares that as it grows it is the cleanest wheat in the whole world. It seems that actual hand-labor is employed literally about each plant, and every weed or unnecessary matter is carefully removed from the soil. It may be well said that to the culture of Indian wheat there is at present applied by the natives of India just the same degree of care and of personal attention that in western lands are confined to choice plants or flowers for market. There is often a great want of moisture, and even irrigation sometimes fails to make up the deficiency of the rains. It appears that in seasons of this sort swarms of native boys, men, women and children go out early in the morning, armed each with a very small mallet of wood, and they actually strike each wheat plant in order to cause the dew collected thereon to fall off and be absorbed by the thirsty soil instead of remaining on the plant to be sucked up by the fierce sun and evaporated. We can not conceive such a thing in the western world as each wheat plant receiving constant individual attention like a prize rosebush, yet we understand that the above are actual facts, and the dew-beating to eke out the scanty moisture exhaled during the night is not regarded by the native wheat-growers as in any degree an uncommon occurrence. The prime cause of the quantity of dirt found in Indian wheat is, of course, the result of their primitive mode of threshing out on the bare ground by the use of cattle. If this were reformed it is quite certain that from the weedless, gardenlike fields the wheat would come in a wonderfully fit state for the miller.

POINTS IN MILLING.

FLOURING-MILLS are attracting considerable attention from insurance men. The underwriters generally agree that such mills are far from being "good risks," and, judging from the number of mill fires, they are not far out of the way.

THE origin of a fire in a mill is generally set down as "mysterious." Sometimes the mill is found in a general blaze, suddenly, in the daytime, while operating, and the fire is at once "beyond control." Again, the fire occurs after the day's work is done, after the hands are gone, without a cause so far as the owner can determine, and again the fire is "beyond control." In both cases the fire is labeled "mys-

terious," and often the underwriters hint at or assert incendiarism.

No fire starts without cause. It is easy to charge incendiarism, but, in the light of the fact that many of the burned mills are not insured at all, that others of them are only partially insured, and that not a single mill in the country is so well insured that its owner would be benefited by its burning, it is not an easy thing to prove incendiarism or even carelessness, so far as the owners are concerned.

It is a truer theory that the mill fires, as a general thing, start in perfectly legitimate ways. Here and there a careless miller may drop matches where they are liable to be lighted, or one may fire a mill by the clumsy or careless handling of naked lights in dusty places, but the larger number of fires do not start in that way.

MILLERS may well take it as proved that mills are very prone to burn, and their attention should be directed to the prevention of fires. It is certain that mill dust will burn. When the dust is dispersed in the air in the proper proportion, an explosion introduces the fire. When the dust is lying thick on every surface, a spark will start the fire. When the dust is in confined spaces, where it is subjected to heat generated by friction, it may smolder for hours, eating its way through the confining material, and, after the mill is closed and the hands have left, it burns through, the air increases the blaze, and the mill is burned "mysteriously."

SPONTANEOUS combustion may bring about a "mysterious" fire. Dust, oil, waste, grease and other refuse about a mill will often start a smoldering fire. In this case, as in the case of confined dust, the fire may smolder for hours.

MILLERS can decrease their liability to costly fires from these causes in only one way. That way implies: 1. A clean mill, with the dust carefully and regularly swept up, or down, and disposed of, with no deposit of miscellaneous dirt allowed anywhere, and with the constant watchfulness of operatives trained to keep everything in shape and place. 2. Frequent inspections during operating hours to provide against possible smoldering fires in elevator-heads, or spouts, or conveyors, or parts of machines in which gathered dust may be subjected to heat from friction. This inspection should take place particularly at the end of the day's run. Every floor should be looked over, every corner explored, every spot looked after in which the conditions can possibly generate a fire.

CARE of this kind is not expensive. It seems to be an absolute necessity, and, until millers are willing to use such care, they must go on suffering from "mysterious" fires, resulting in the loss of \$2 or \$3 to every dollar of insurance which they can secure or afford on their plants. The fire and insurance question is a most important one, not only to the underwriters, but even more to the millers themselves. The miller who will trouble himself to experiment with average mill dust and fire will be surprised at the behavior of the dust in contact with fire. Scrape up a mess of such dirt from a dozen different spots in a mill and try it with fire. You will learn something from the trial. Do not carry on the experiments in the mill.

CATARRH.

CATARRHAL DEAFNESS—HAY FEVER.
A NEW HOME TREATMENT.

Sufferers are not generally aware that these diseases are contagious, or that they are due to the presence of living parasites in the lining membrane of the nose and eustachian tubes. Microscopic research, however, has proved this to be a fact, and the result of this discovery is that a simple remedy has been formulated whereby catarrh, catarrhal deafness and hay fever are permanently cured in from one to three simple applications made at home by the patient once in two weeks.

N. B.—This treatment is not a snuff or an ointment; both have been discarded by reputable physicians as injurious. A pamphlet explaining this new treatment is sent free on receipt of stamp to pay postage, by A. H. Dixon & Son, 337 and 339 West King street, Toronto, Canada.—*Christian Advocate*.

Sufferers from Catarrhal troubles should carefully read the above.

COMPOUND Condensing or Non-Condensing.
16 SIZES, 5 to 500 H. P.
Not yet equaled by any form of Engine for
HIGH FUEL DUTY AND SIMPLICITY.

STANDARD 13 Sizes in Stock.
5 to 250 H. P.
3000 in use in all parts of the Civilized World.

JUNIOR 6 Sizes in Stock.
5 to 50 H. P.
An Automatic Engine cheaper than a Slide Valve.
WELL BUILT. ECONOMICAL. RELIABLE.
Over 300 Sold the First Year.

All the above built strictly to Gauge with
INTERCHANGEABLE PARTS.
REPAIRS CARRIED IN STOCK.
SEND FOR ILLUSTRATED CATALOGUES.

WESTINGHOUSE ENGINES

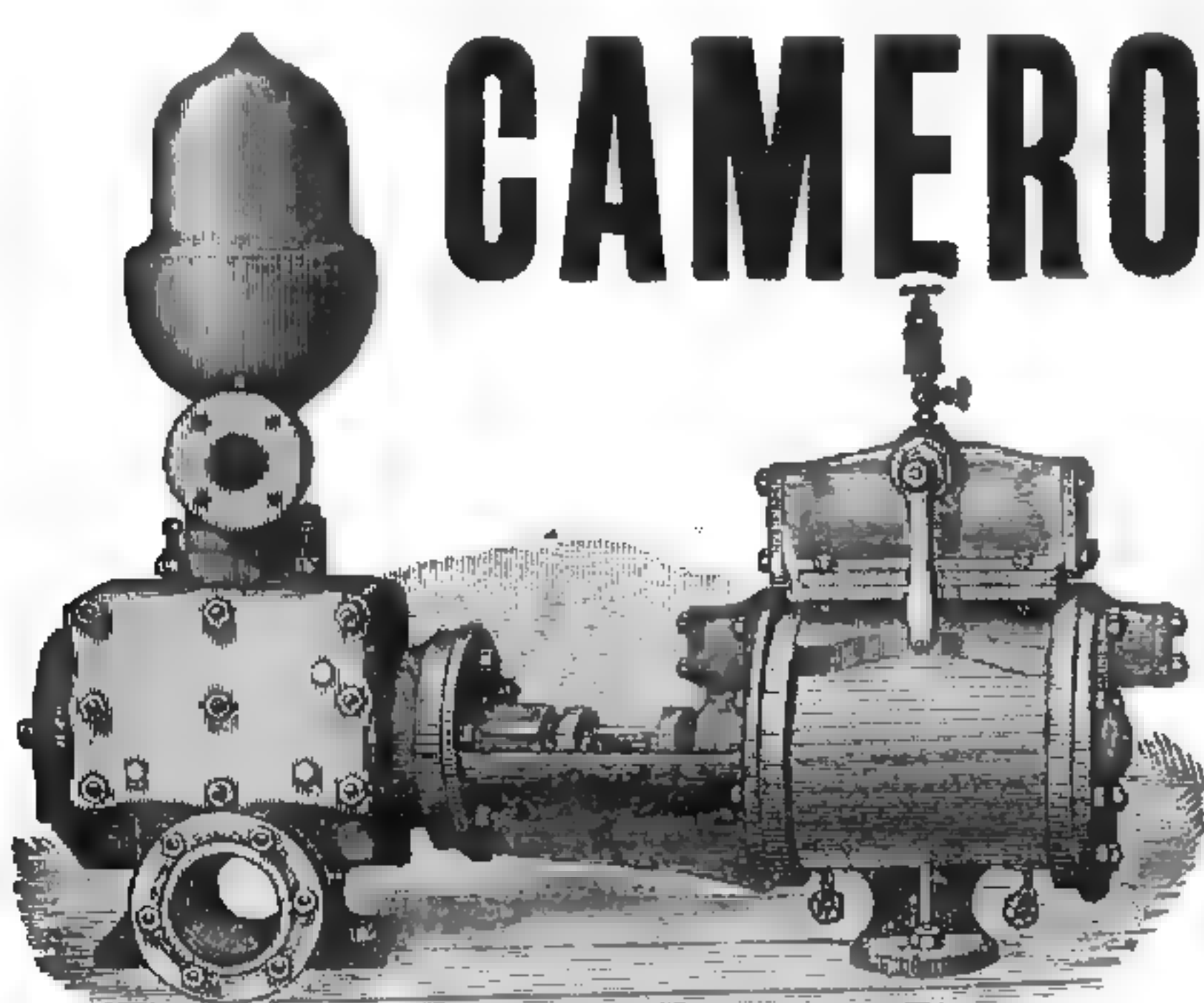
The Westinghouse Machine Co.
PITTSBURGH, PA. U.S.A.

SELLING DEPARTMENT IN THE UNITED STATES.

New York,	47 Cortlandt St.	Westinghouse, Church, Kerr & Co.
Boston,	Hathaway Building,	
Pittsburgh,	Westinghouse Build'g,	
Chicago,	156, 158 Lake St.	
Philadelphia,	608 Chestnut St.	M. R. Muckle, Jr. & Co.

ST. LOUIS,
511 NORTH FOURTH ST.,
Westinghouse, Church, Kerr & Co.

Salt Lake City,	259 S. Main St.	Utah & Montana Machinery Co.
Butte, Mont.	40 Granite St.	
San Francisco,	21, 111 Fremont Street,	Parke & Lacy Co.
Portland, Or.	33, 35 N. Front St.	
Charlotte, N. C.	36 College St.	The D. A. Tompkins Co.
Atlanta, Ga.	45 S. Prior St.	
Dallas, Tex.		Keating Imp. & Machine Co. G. E. James & Co.
Chattanooga, Tenn.,		



CAMERON STEAM PUMP

THE STANDARD OF EXCELLENCE.
SIMPLE! COMPACT! DURABLE!
"NO OUTSIDE VALVE GEAR."

Steam, Air & Vacuum Pumps in Every Variety

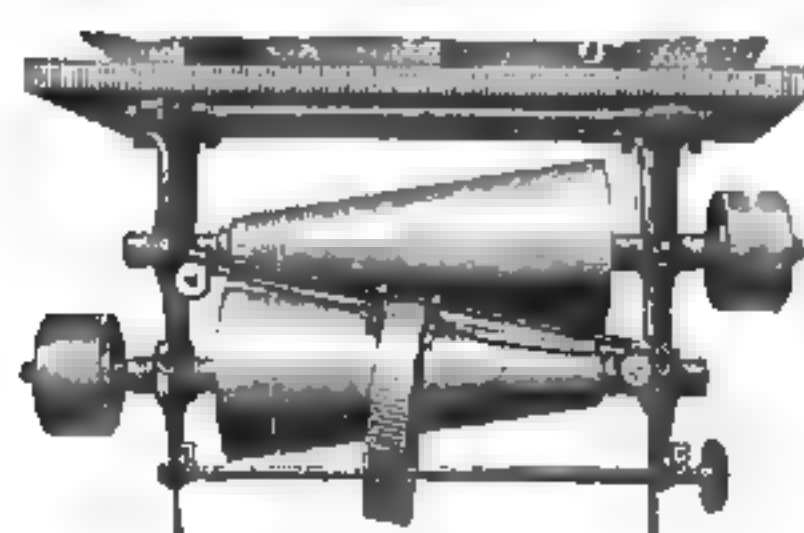
FOR ILLUSTRATED CATALOGUE ADDRESS

THE A.S. CAMERON STEAM PUMP WORKS

Foot of East 28d Street. - New York.

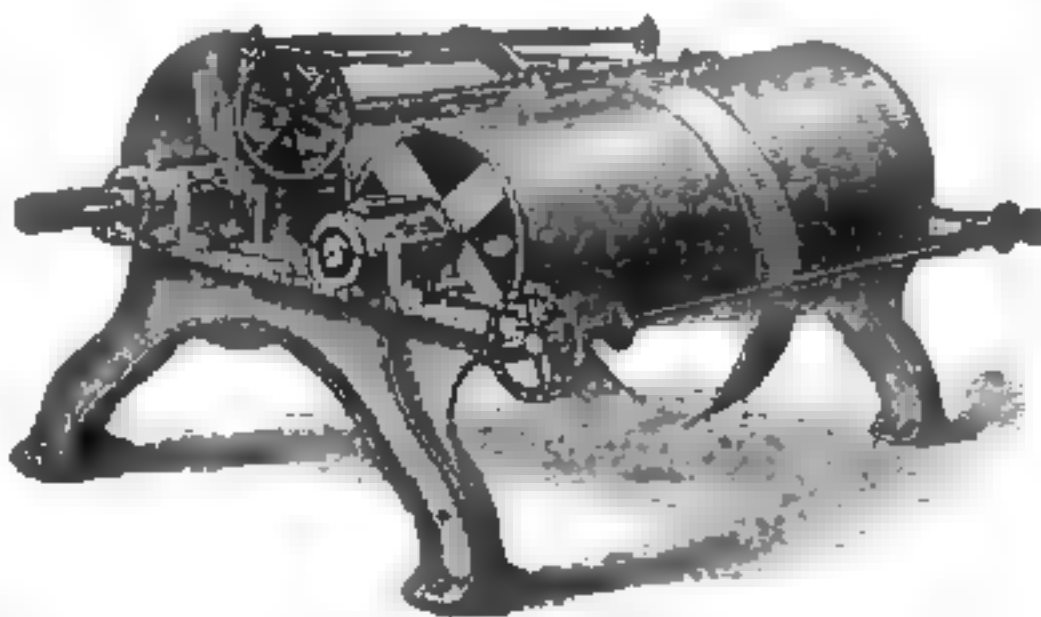
THE EVANS FRICTION CONE & FRICTIONAL GEARING

"PATENTED."



actuating. All sizes made from 1/2 Horse Power to 50 Horse Power. **SEND FOR ILLUSTRATED CATALOGUE.**

This cut represents a set of hanging cone pulleys. This pattern is intended for that class of machinery that stops and starts at the same speed, and at the same time be able to change the speed more or less while running. These cones are also fitted with a governor where a steady motion is required and the initial power is



EVANS FRICTION CONE CO., 85 Water St., BOSTON.

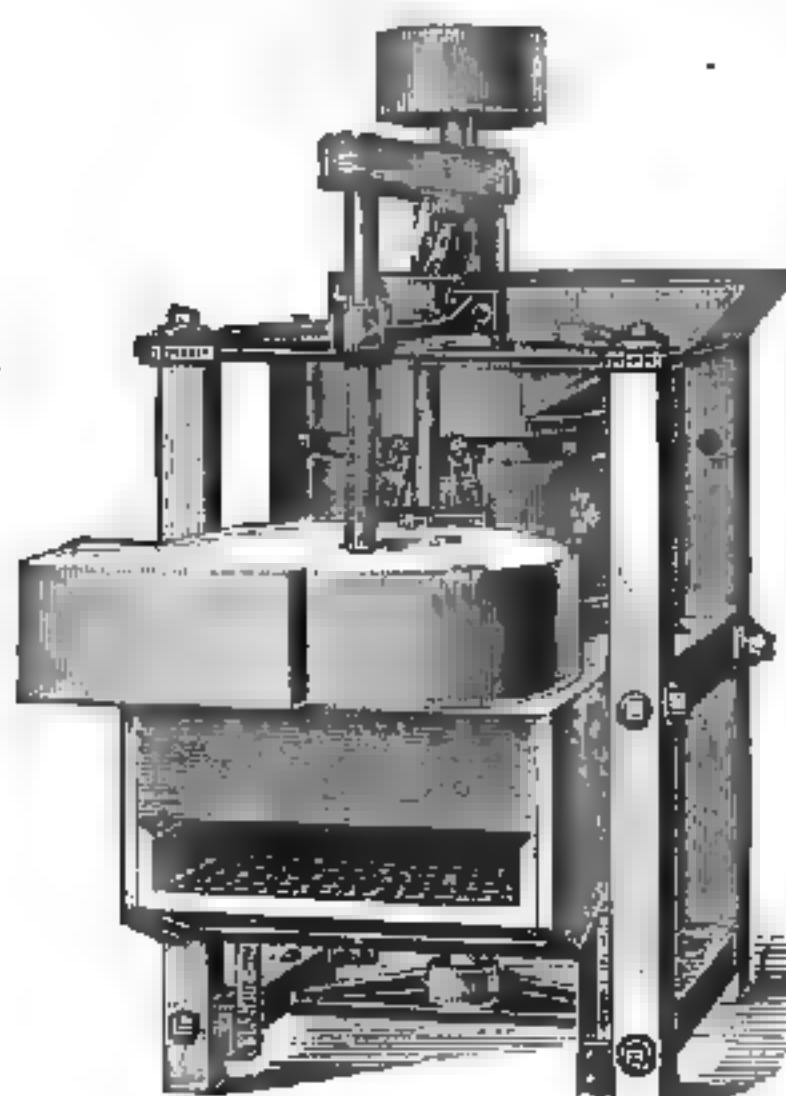
SHIPPERS CAN SAVE TIME AND CASH

BY USING
BARLOW'S
PATENT
MANIFOLD
SHIPPING
BLANKS. SEND FOR
SAMPLE SHEET & PRICES
BARLOW BROS. GRAND RAPIDS, MICH.

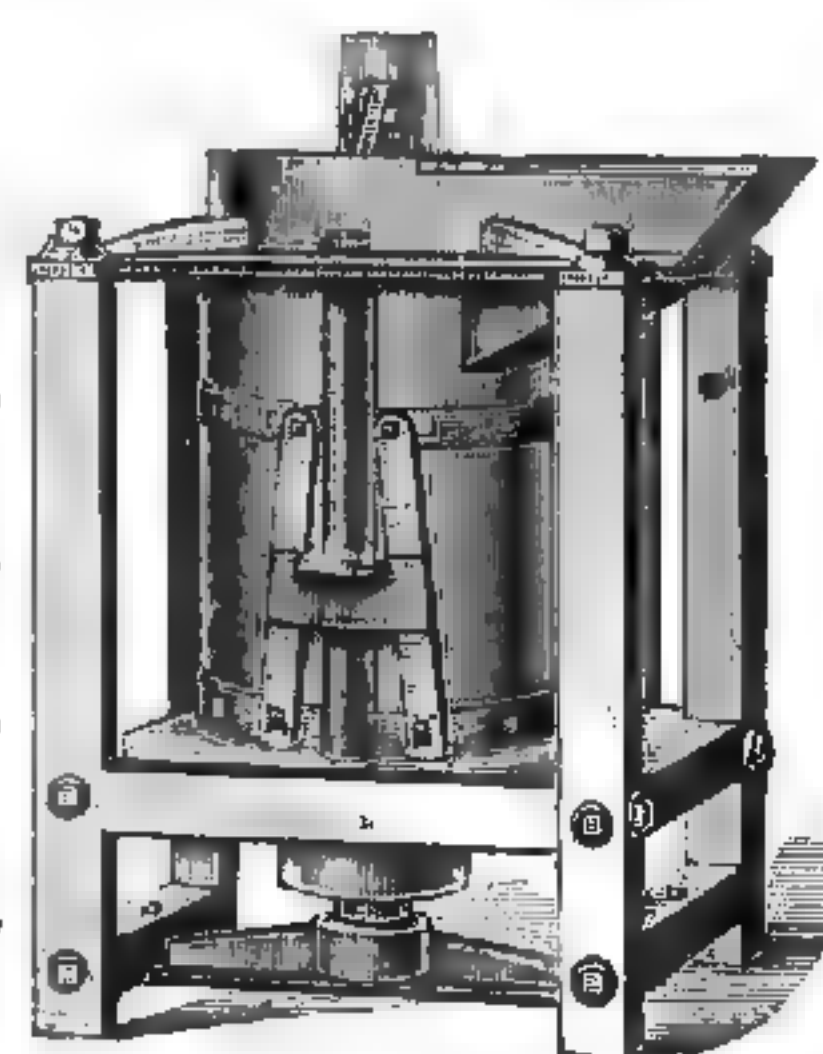
The LIPPOLD DUSTLESS CORN SHELLER & CLEANER

MANUFACTURED BY

The LIPPOLD MFG. CO.
ERIE - - PENN.



THE HIGHEST CAPACITY for the LEAST MONEY.
The Best Machines for Mills and Elevators.
Machines Sent on Thirty Days' Trial.
SHELL UNHUSKED CORN AND CLEAN IT PERFECTLY.



WRITE FOR ILLUSTRATED CIRCULAR WITH PRICES.
NAME THIS PAPER.



OFFICE OF THE MILLING WORLD,
BUFFALO, N. Y., March 1, 1890.

Friday of last week brought weaker markets all along the line, on lower cables, on bear pounding, on rumors of railroad rate war and other bear influences. February wheat in New York closed at 86c., with Atlantic port receipts 33,441, exports 92,356, and options 3,640,000 bushels. February corn closed at 35c., with receipts 434,297, exports 448,418, and options 2,544,000 bushels. February oats closed at 26½c., with receipts 195,535, exports 109,338, and options 840,000 bushels. Wheat flour was dead on the weakness in wheat. The clearances of the three past weeks amounted to 360,000 sacks, so that the railroad docks are not so overcrowded as the bears could wish, and there is less probability of a bad break than they anticipated. Receipts included 4,740 sacks and 17,852 barrels, and exports 27,337 sacks and 16,536 barrels. The minor lines were featureless.

Saturday was a holiday. The bulls and bears lambs and wolves left the markets to slump, sag, drag and die without botherment or attempt to help them.

Monday opened with dull, easy and lower market, on lack of speculative and spot demand. February wheat closed at 85¾c., with receipts 77,985, exports 120,444, and options 1,560,000 bushels. February corn closed at 35c., with receipts 597,598, exports 545,252, and options 1,360,000 bushels. Interior receipts were 1,336,256 bushels. February oats closed at 26¾c., with receipts 285,298, exports 120,218, and options 500,000 bushels. Wheat flour was dull, unchanged and in buyers' favor. Even concessions failed to create a demand. Local trade was small. Receipts included 14,546 sacks and 32,165 barrels, and exports 13,186 sacks and 8,746 barrels. The minor lines were featureless. The visible supply in the United States and Canada was:

	1890. Feb. 22.	1889. Feb. 23.	1888. Feb. 25.
Wheat.....	29,618,581	32,740,409	33,461,453
Corn.....	13,736,567	15,462,701	8,848,232
Oats.....	5,106,980	8,067,181	4,872,163
Rye.....	1,529,397	1,678,443	376,992
Barley.....	1,862,651	2,065,159	2,486,715

Tuesday brought some improvement in the markets, on shorts covering, less bearish activity, reports of cold weather in the West, and better exports and cables. February wheat closed as 86c., with receipts 75,747, exports 54,805, and options 1,424,000 bushels. February corn closed at 34¾c., with receipts 843,935, exports 387,608, and options 1,552,000 bushels. February oats closed at 27½c., with receipts 180,668, exports 215,317, and options 250,000 bushels. Wheat flour was steadier and more active, the railroads having receded from their "ten-day notice" rule, relieving the pressure to sell dock stuff. Buyers believe that the bottom has been touched, and they begin to come in. Receipts were 6,227 sacks and 25,773 barrels, and exports 21,045 sacks and 8,386 barrels. All the minor lines ruled steady and featureless.

The following shows the amount of wheat and flour, together with the amount of corn, on passage to United Kingdom, for ports of call or direct ports for the weeks mentioned:

	1890. Feb. 25.	1889. Feb. 26.
Wheat and flour, qrs....	2,299,000	2,067,000
Corn, qrs.....	769,000	340,000

The following shows the amount of wheat and corn on passage to the Continent for the past week and for the same week last year:

	1890. Feb. 25.	1889. Feb. 25.
Wheat, qrs.....	421,000	432,000
Corn, qrs.....	405,000	203,000
Shipments India wheat to U. K.....	None.	
do do Continent.....	22,500	

The imports into the United Kingdom for the past week and for the same weeks in previous years were as follows:

	1890. Feb. 25.	1889. Feb. 18.	1888. Feb. 26.
Wheat, qrs.....	127,000	151,000	231,000
Corn, qrs.....	221,000	141,000	177,000
Flour, bbls.....	165,000	127,000	208,000

Wednesday was a day of general quiet and dullness. February wheat ruled at 86c., with receipts 30,425, exports 22,593, and options 2,500,000 bushels. February corn closed at 34¾c., with receipts 533,687, exports 604,904, and options 1,520,000 bushels. Buckwheat grain was 35@38c. Rye grain was 53@55c. for Western, 57@58c. for State, 55@57c. for Canada, and 52@53c. for ungraded track lots. Barley was in fair demand at 48@52c. for 2-rowed, 53@58c. for 6-rowed, and 58@72c. for Canada. Mill-feed was quiet and firm at 65@67½c. for 40 and 60 lb., 62½@65c. for 80-lb., 77½c. for 100-lb., and 72½c. for rye.

Wheat flour was held higher on raised limits by millers, and late asked prices were more freely bid, both by local and export traders, but buyers and sellers were generally 5@10c. apart. Receipts included 7,476 sacks and 38,792 barrels, and exports 12,380 sacks and 21,495 barrels. Quotations were:

SPRING FLOUR.		
	Sacks.	Barrels.
No grade.....	\$1.25@1.40	\$....@....
Fine.....	1.40@1.70	1.60@2.00
Superfine.....	1.86@2.10	2.10@2.15
Extra No. 2.....	2.15@2.50	2.40@2.85
Extra No. 1.....	2.85@3.10	3.60@3.65
Clear.....	3.00@3.25	3.05@4.00
Straight.....	3.75@4.15	4.00@4.00
Patent.....	4.35@4.75	4.95@5.00

WINTER FLOUR.		
	Sacks.	Barrels.
No grade.....	\$1.35@1.70	\$....@....
Fine.....	1.85@2.00	1.85@2.15
Superfine.....	1.85@2.15	2.25@2.40
Extra No. 2.....	2.50@2.70	2.00@2.50
Extra No. 1.....	2.75@3.40	2.85@3.65
Clear.....	3.10@3.50	3.40@4.00
Straight.....	3.65@3.90	4.10@4.25
Patent.....	3.95@4.20	4.55@4.75

CITY MILLS.		
W. I. grades.....		4.30@4.35
Low grades.....		2.30@2.40
Patents.....		4.65@5.20

Rye flour was quiet and rather in buyers' favor at \$2.75@2.90 for State superfine. Buckwheat flour was nominally \$1.30@1.50. Corn products were steady with corn, at the following quotations: Western and Southern in barrels \$2.25@2.50; Brandywine \$2.55; coarse, in bags, 68@72c.; white and yellow, fine, 90@95c.; brewers' \$1.00.

Thursday brought no decided changes in the markets. February wheat closed a little higher, at 86½c., with receipts 27,400, exports 40,985, spot sales 53,000, and options 7,584,000 bushels. February corn closed at 36½c., with receipts 137,400, exports 80,317, spot sales 211,000, and options 360,000 bushels. Oats ruled quiet and higher, March closing at 28c., with receipts 110,000, spot sales 101,000, and options 2,370,000 bushels. Wheat flour was stronger, in some lines 5@10c. higher, and more active. Receipts were 14,650 packages, and sales 25,150 barrels. Sales included the following: Low extras \$2.10@2.65; city mills \$4.30@4.50; city mills patents \$4.65@5.25; winter wheat low grades \$2.10@1.65; fair to fancy \$2.85@4.45; patents \$4.15@4.90; Minnesota clear \$3.15@4.10; Minnesota straights \$3.70@4.60; Minnesota patents \$4.25@5.00; Minnesota rye mixtures \$3.15@3.70; superfine \$2.00@2.60. The other lines were generally better, although not active. The Minneapolis output of flour the past week was about 118,000 barrels.

BUFFALO MARKETS.

WHEAT—Little was done here to-day beyond the sales of a few thousand bushels of No. 1 Northern at 87½@87¾c. but later it could not be bought for less than 88c. No. 1 hard is held at 89½c. No. 2 Northern at 84½c. No sales of winter wheat of any account were reported, and No. 2 red is quoted at 81@81½c. and No. 3 white at 78½c. CORN—No. 3 yellow was sold at 33c. No. 4 is dull at 31½c. No. 2 mixed is held at 32@32½c. and No. 4 do at 30½@31c. OATS—No. 2 white oats were sold at 26½c. No. 3 white and No. 3 mixed are

quoted at 25½@26c. and No. 3 mixed at 24¼c. RYE—There is no change in prices. Quotations remain at 51@52c. BARLEY—There is no change to report. No. 1 Canada is quoted at 65c.; No. 2 quotable at 57@60c., No. 3 at 51@56c. and Western at 36@50c. OATMEAL—Akron, \$6.00; Western, \$5.75 per bbl.; rolled oats, in cases, 72 lbs., \$3.25. CORNMEAL—Coarse, 80@85c.; fine, 85@90c.; granulated, \$1.50 per cwt. MILLFEED—City-ground coarse winter, \$13.50@14.00 per ton; fine do. \$14.50@15.50; finished winter middlings, \$15.00@15.50; coarse spring do, \$13.00@13.50.

FLOUR MARKET.

Spring Wheat.		Winter Wheat.	
Patents.....	\$5.50@6.00	Patents ..	\$4.75@5.25
Straight.....	4.50@5.00	Straight..	4.25@4.75
Bakers.....	3.50@4.00	Clear ..	3.75@4.25
Red Dog...	2.25@2.75	Low grades	2.50@3.00

Retail prices 50c per bbl above these quotations.
Buckwheat flour \$1.50@1.75 per 100 lbs.

Quanah, Tex., men project a roller mill.
Ragsdale, Tenn., men build a flouring-mill.
E. Fairman, Mullin, Tex., builds flour-mill.
H. B. Rossell, Best, N. C., built a flour-mill.
The Farmer's Alliance of Rutledge County,
J. W. Duck, Windsor Station, Va., improves mill.

The Mansfield, Tex., Milling Co. want corn-rolls.

The Athens, Tenn., Flour Mill improved outfit.

P. B. Derrick's grist-mill, Johnston, S. C., burned.

Ballard & Butler, Blackston, Va., started a grist-mill.

N. C., project a roller flouring-mill at Forest City, N. C.

Stroup & Abernathy, Beam's Mills, N. C., built a flour-mill.

J. B. Martin's flouring-mill, Greenville, Tex., burned; no insurance.

S. Brower, Hanlan, Tenn., has bought a grist-mill; he wants machinery.

H. R. Grape's Eagle Mills, Hamburg, Ia., burned; loss \$15,000; fire incendiary.

John F. Cripps, Philadelphia, Pa., will build a roller flour-mill at New Castle, Va.

D. S. Brockway, Greensborough, Md., will build an 8,000-bushel grain-elevator at once.

F. J. Pease, New England, W. Va., have bought and will improve the Bowman flouring-mill.

V. Hein's flouring-mill, Humbird, Wis., burned with contents; loss \$12,000; insurance \$8,000.

The Attica Roller Mill, Attica, N. Y., a 250-barrel plant, has been sold to eastern purchasers.

R. M. Pratt & Co.'s flour-mill and elevator, Champlin, Minn., burned; loss \$20,000; insurance \$10,000.

John H. Reckford and others, Reckford, Md., have incorporated the Henry Reckford Mfg. Co., capital stock \$60,000, to operate the flouring-mill of the late firm of Henry Reckford & Sons.

The March number of *Scribner's Magazine* is one full of variety and interest. The contents include a frontispiece, the subject of which is Charles Lamb, and an article entitled "In the Footprints of Charles Lamb," by B. Ellis Martins "Expiation," VI-IX, by Octave Thanet; "The Vanished Year," by John Vance Cheney; "A Forgotten Remnant," by Kirk Munroe; "In-science," by W. G. Van Tassel Sutphen; "In the Valley," XXI-XXIV, by Harold Ferdie; "John Ericsson, The Engineer," illustrated, by William Conant Church; "The Hidden Self," by Wm. James; "The Blackfellow and His Boomerang," by Horace Baker; "A Deedless Drama," by Geo. A. Hibbard; "The Point of View," a department of pleasant and instructive miscellany. The illustrations are copious and even finer than usual, if that may be said of work so fine as is generally seen in this superb periodical. All the articles are bright, fresh, crisp and entertaining. Address Charles Scribner's Sons, New York, N. Y.

STANLEY'S NEW BOOK.

5,000 good active agents wanted at once, either sex, to introduce this great work. Here is a chance for you. Any one can sell the book, as the whole world is interested. The book will contain a full account of all of Stanley's Explorations in Africa, and especially of his Latest Expedition for the Relief of Emin Bey. About 600 pages and 100 entirely new illustrations, maps, etc. Complete canvassing outfit with all instructions will be mailed on receipt of 40 cents. Do not delay in writing; order outfit and get territory at once. The only genuine new Stanley book out. Address, **Peerless Publishing Co., 808-10-12 Olive Street, St. Louis, Mo.**



RELIANCE OIL & GREASE CO., CLEVELAND, O.

—MANUFACTURERS OF—

Finest Lubricants for Milling Plants. A Challenge to the World.

WRITE US.

"VALVE OLEINE"—875 Degrees Fire Test, Cylinder Oil.

"CHIEF"—Roller Mill Lubricant.

"NIAGARA"—Belt Grease.

"RUSSIAN"—Engine and Machine Oil.

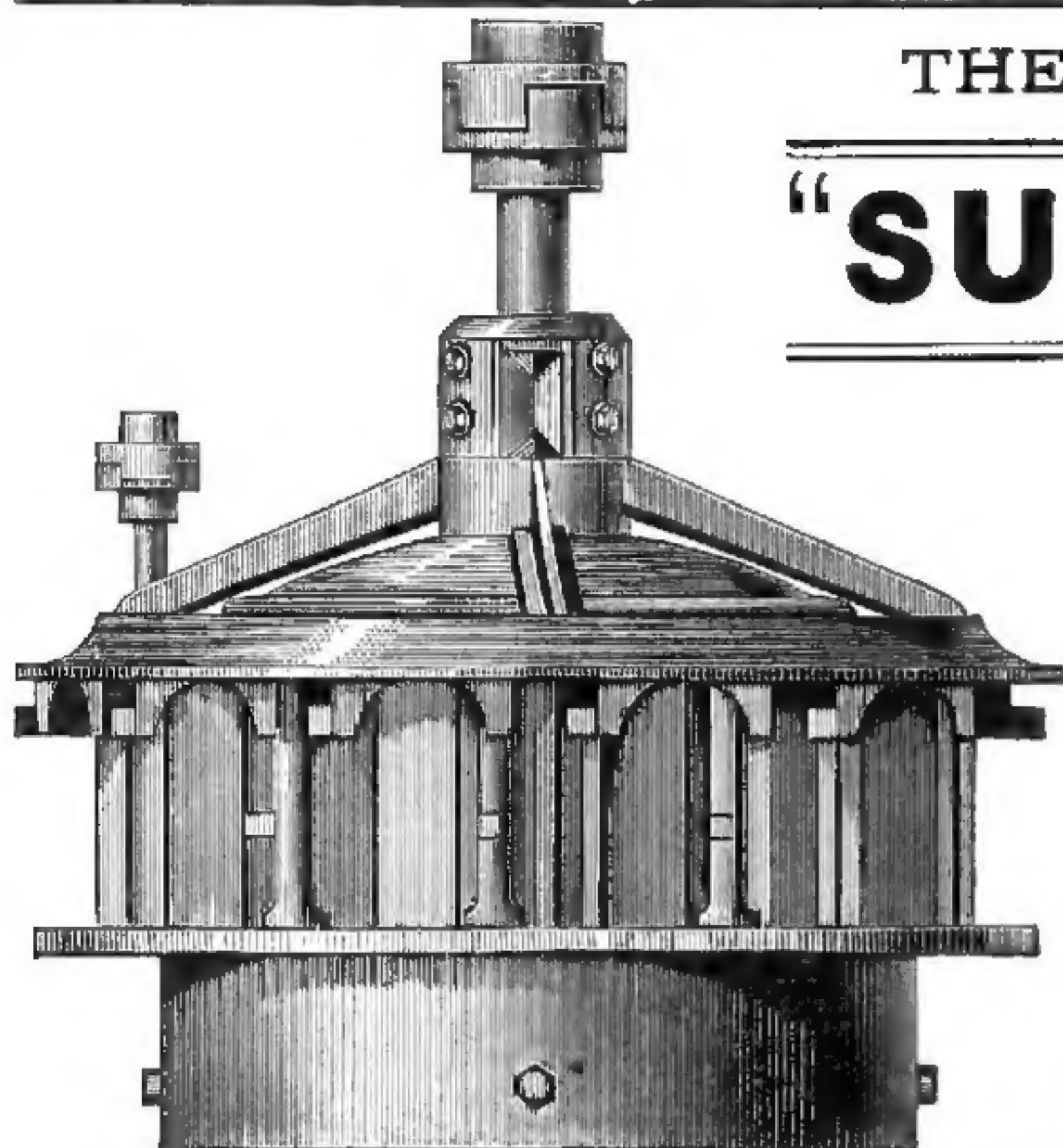
"ANCHOR"—Roller Mill Grease.

"CHELSEA"—Scale Solvent, Best on Market.

Agents Wanted.

FREE—SAMPLES, CATALOGUE, AND ALL INFORMATION.

SPECIAL
HIGH GRADE
PRODUCTS



THE IMPROVED

"SUCCESS"

PERCENTAGE:

Full Gate, - - 86.29

$\frac{7}{8}$ Gate, - - - 86.07

$\frac{3}{4}$ Gate, - - - 81.90

—(0:)—

This Wheel is Both Durable and Cheap. Send for Pamphlet to

S. MORGAN SMITH

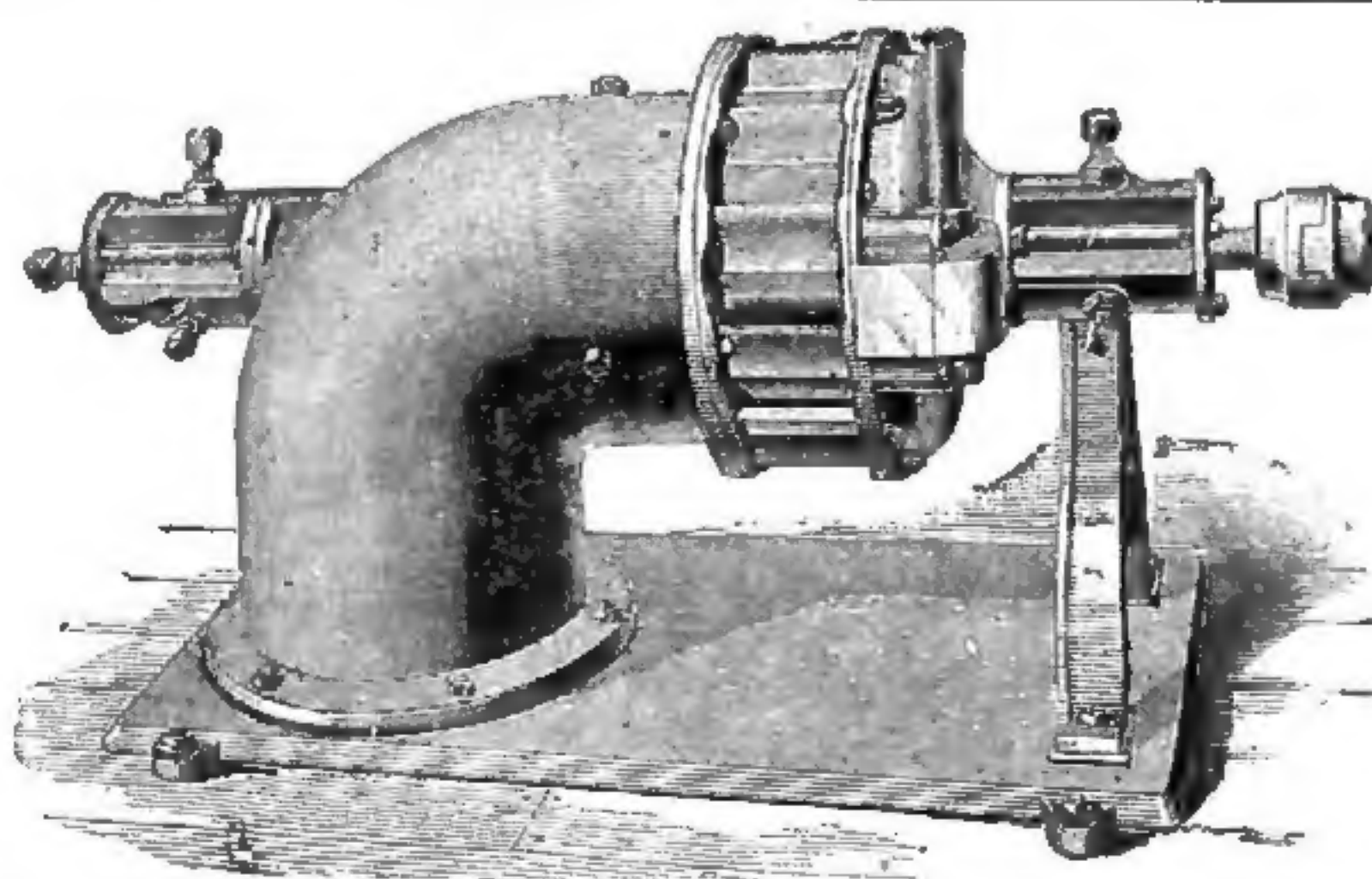
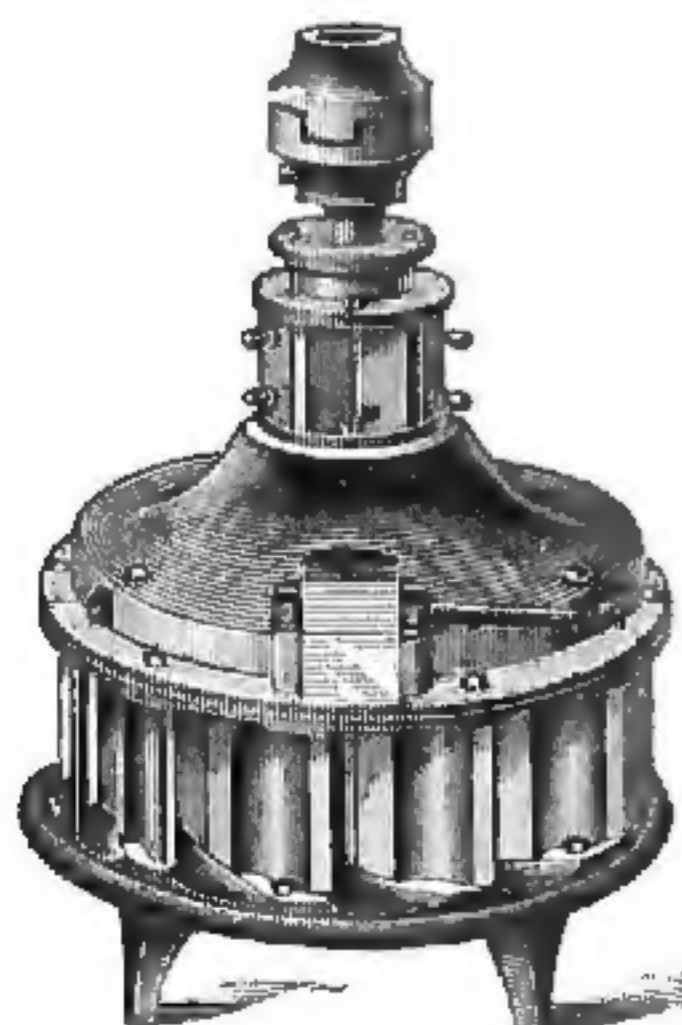
YORK, - PA.

WHEN WRITING TO ADVERTISERS

PLEASE MENTION

THE MILLING WORLD.

The Cincinnati Corrugating Co.

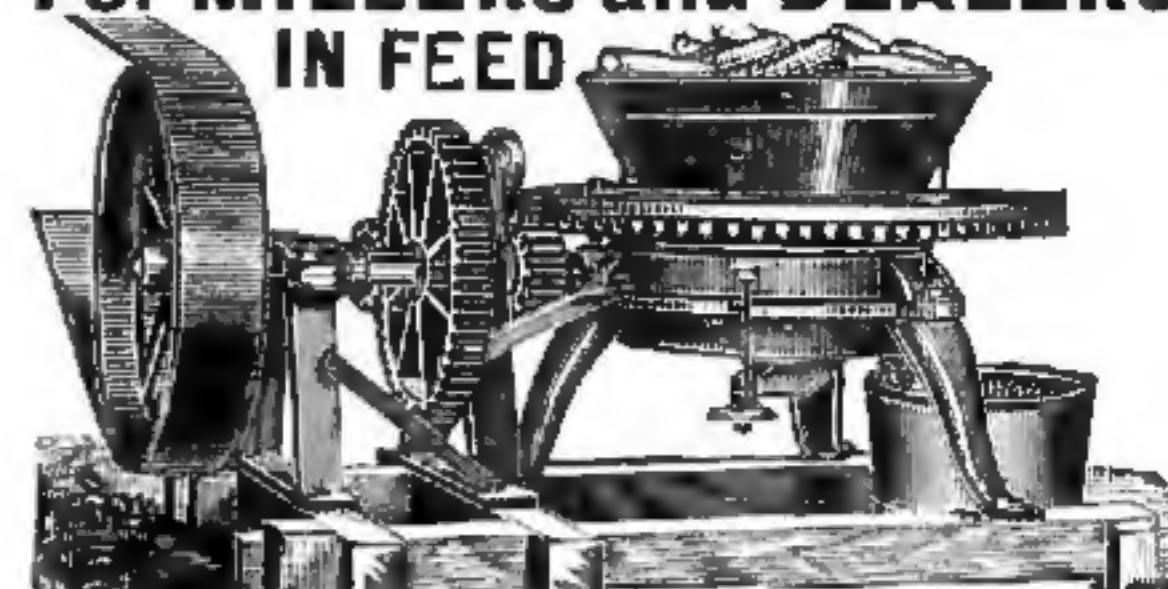


**BURNHAMS NEW IMPROVED
STANDARD TURBINE WHEEL,
ON VERTICAL OR HORIZONTAL SHAFT.**

IT WILL PAY INTERESTED PERSONS TO INVESTIGATE THE MERITS OF THIS WHEEL BEFORE PLACING THEIR ORDER. SEND FOR NEW CATALOGUE.

BURNHAM BROS., YORK, PA.

**Corn & Cob Crusher & Grinding Mill
For MILLERS and DEALERS
IN FEED**



THE STAR STEAM POWER GRINDING MILL

is unsurpassed for preparing Ear Corn so that it can be ground on the Stone Burr, or for grinding Chop Feed fine enough for use at one grinding. 40 to 50 bush. per hour. Send for circular & prices. THE STAR MFG. CO., New Lexington, O.

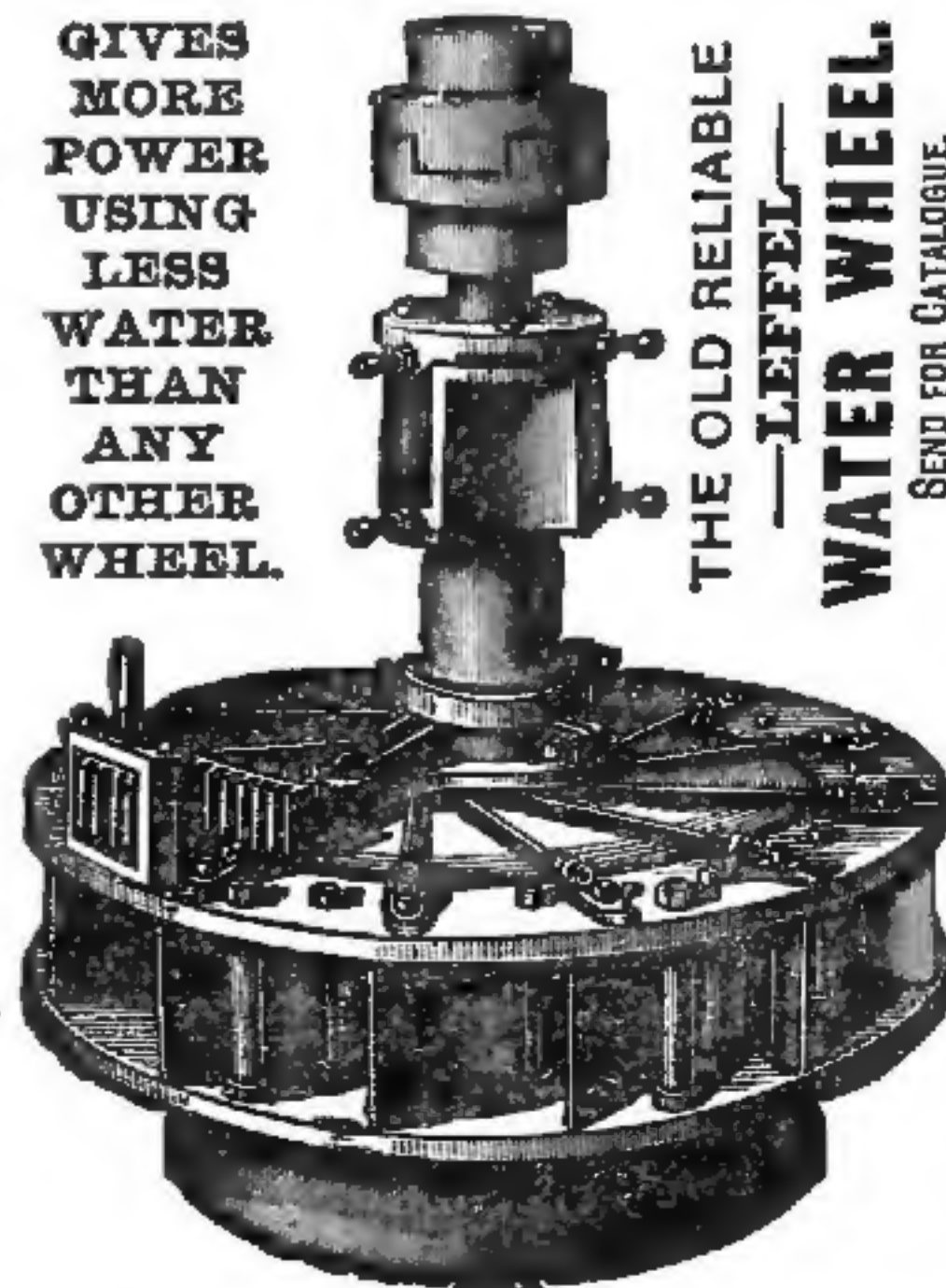


THIS WHEEL GIVES HIGH RESULTS, AND IS ACKNOWLEDGED THE BEST, MOST PRACTICAL AND EFFICIENT TURBINE MADE. FOR SIMPLICITY, DURABILITY, AND TIGHTNESS OF GATE IT HAS NO EQUAL.

State requirements and send for Catalogue to

**T. C. ALCOTT & SON,
MOUNT HOLLY, N. J.**

GIVES
MORE
POWER
USING
LESS
WATER
THAN
ANY
OTHER
WHEEL.



THE OLD RELIABLE
—LEFFEL—
WATER WHEEL.

SEND FOR CATALOGUE

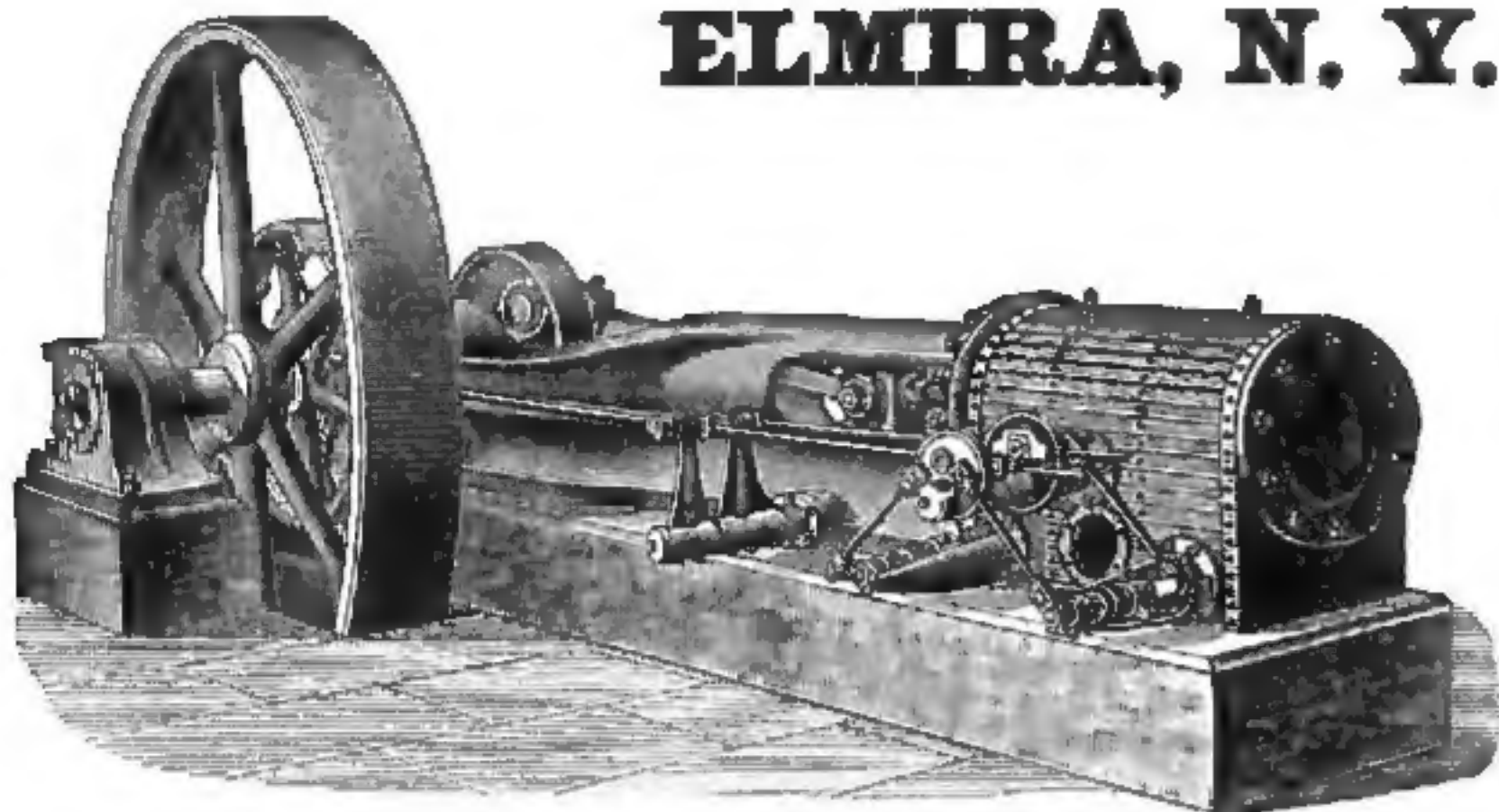
**JAMES LEFFEL & CO.,
SPRINGFIELD, O., OR 110 LIBERTY ST., N.Y.**

PAYNE HIGH SPEED CORLISS ENGINE

SHAFT GOVERNOR COMBINED WITH CORLISS WRIST-PLATE.
ECONOMY OF FUEL.

REGULATION EQUAL TO ANYTHING IN USE.

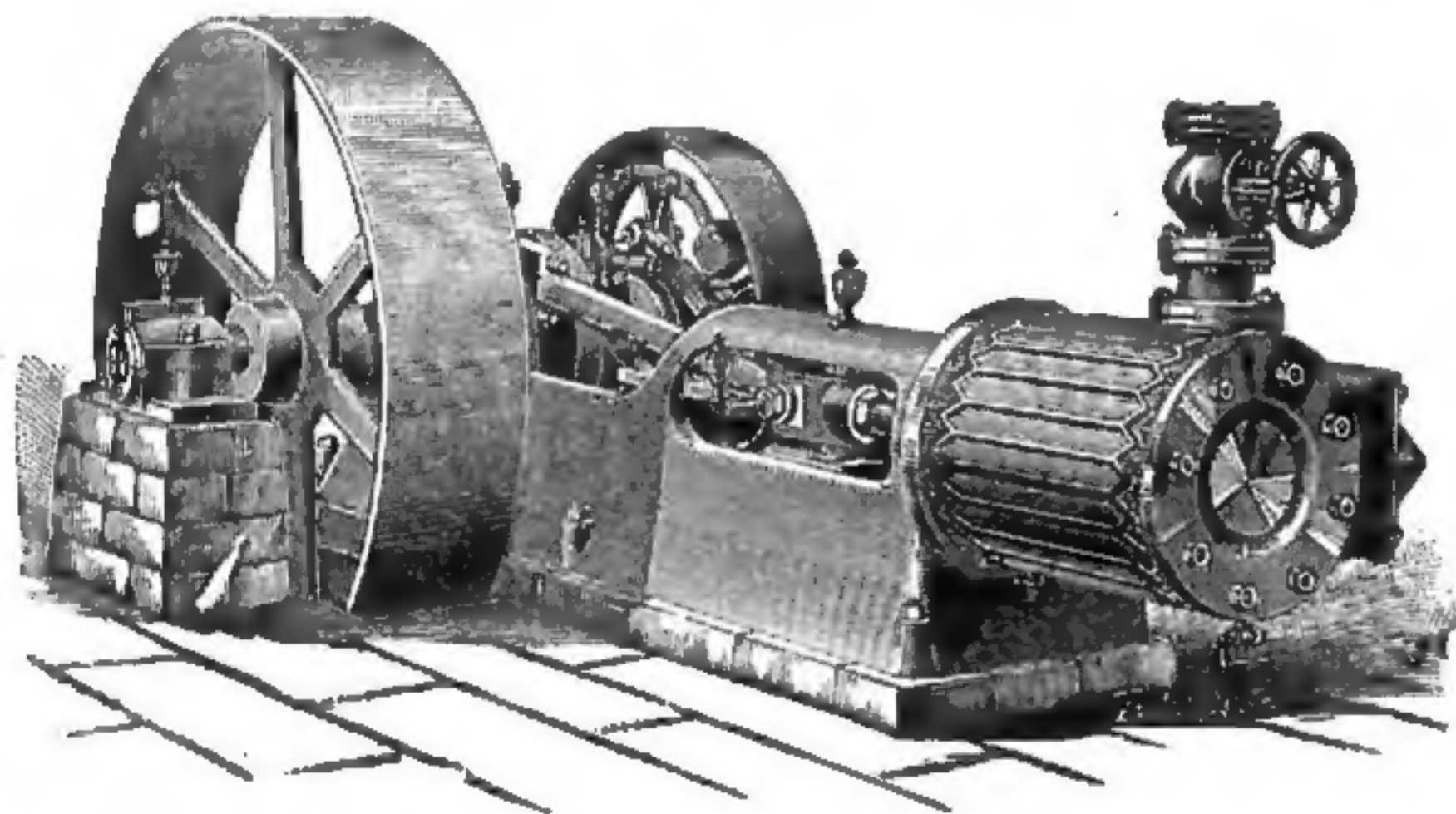
B. W. Payne & Sons,
ELMIRA, N. Y.



10 S. Canal Street.
CHICAGO, ILL.
45 Dey Street
NEW YORK.
Hill, Clark & Co.
BOSTON, MASS.

AUTOMATIC ENGINES FROM 2 TO 200 HORSE POWER.

Economic Power Plants



Especially Adapted to Electric Lighting and
WOOD-WORKING ESTABLISHMENTS
MANUFACTURED BY
VALLEY IRON WORKS, WILLIAMSPORT, PENN.

Please Send for Our New Catalogue and Mention "The Milling World."



BRANCH HOUSE, 1425 EAST MAIN STREET, RICHMOND, VA.

Lloyd & Sterrett

COR. 16TH AND STATE STREETS,
ERIE, - - PENN.

THIS SPACE BELONGS TO
LLOYD & STERRETT
ENGINES AND BOILERS,
ERIE, - - PENN.

Lloyd & Sterrett

COR. 16TH AND STATE STS.,
ERIE - - PENN.



**MOORE'S
PATENT
BARREL HEATER.**

JOLIET STOVE WORKS. JOLIET ILL.

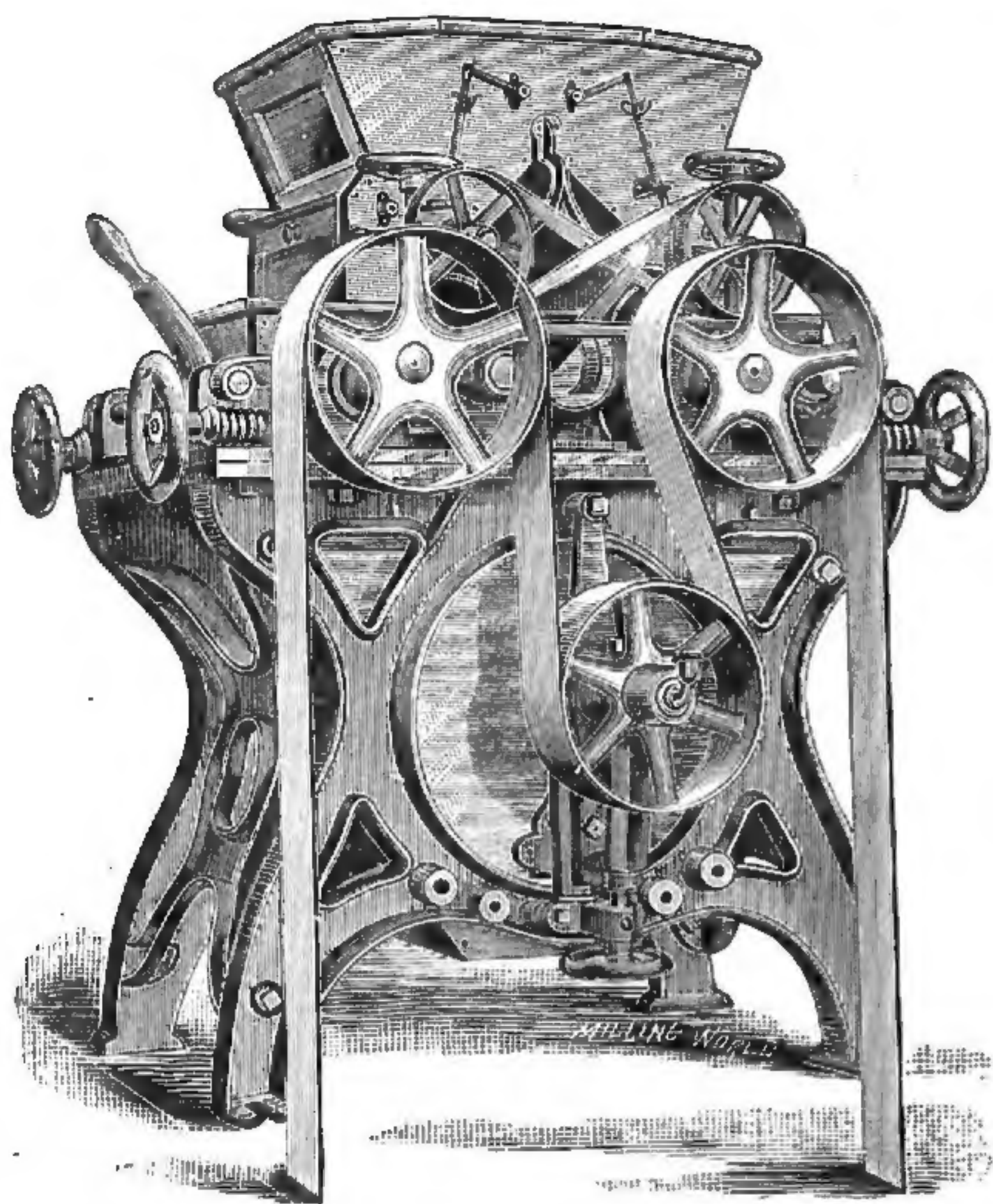


KEEP YOUR BELTS FROM SLIPPING

And Save Your Power by Using FRICTION COVERING for Pulleys. Agents
Wanted. Satisfaction Guaranteed- Easily Applied. No Rivets. Effective.

NATIONAL PULLEY COVERING CO., BALTIMORE, MD.

JOHN HUTCHISON MFG. CO., Mill Builders and Mill Furnishers.



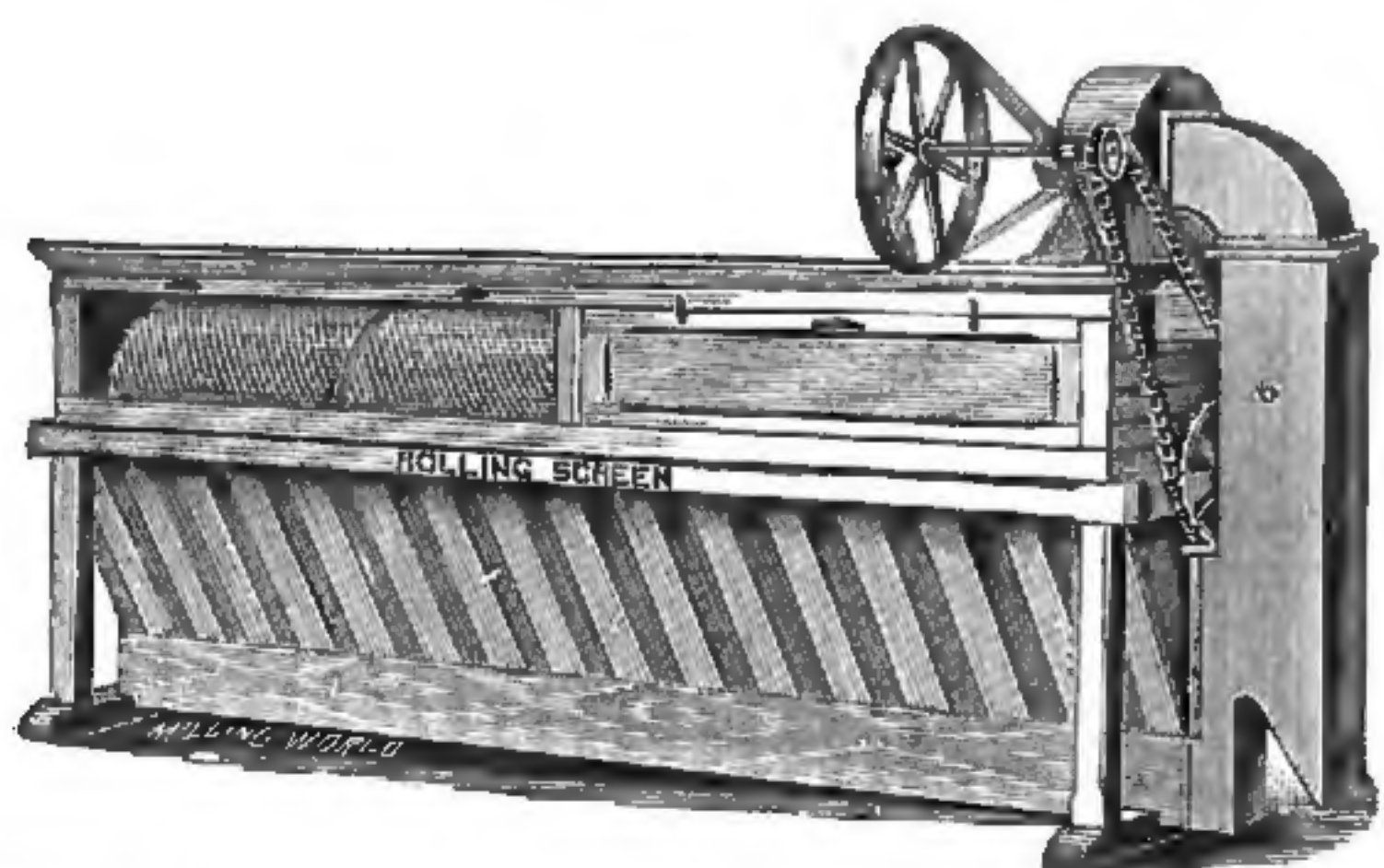
"The Rickerson." The original six inch 4 Roller Mill. We now own the patents on this mill and after greatly improving the mill manufacture them in four sizes:

6x12 inch.

6x18 inch.

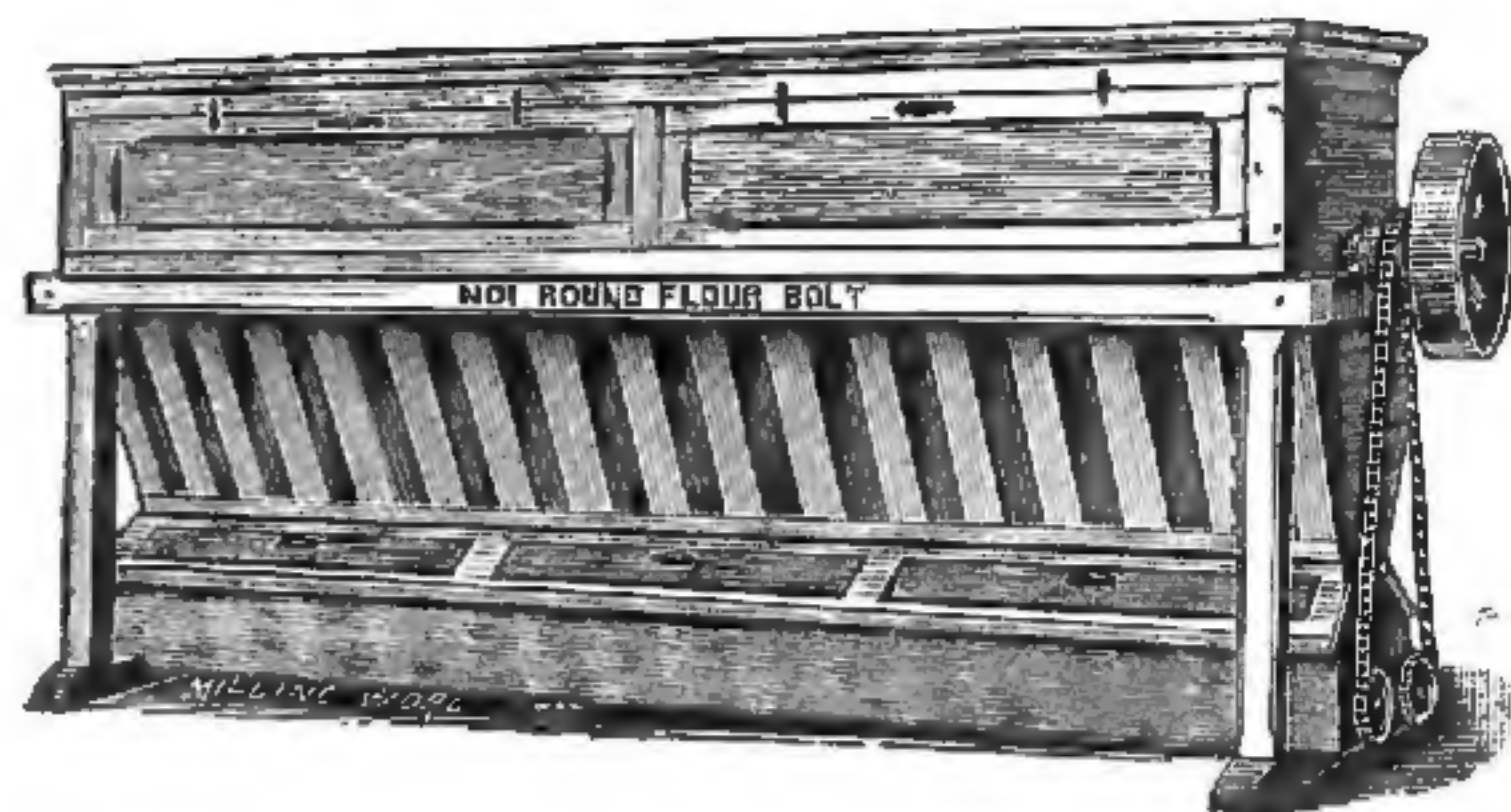
6x15 "

6x20 "

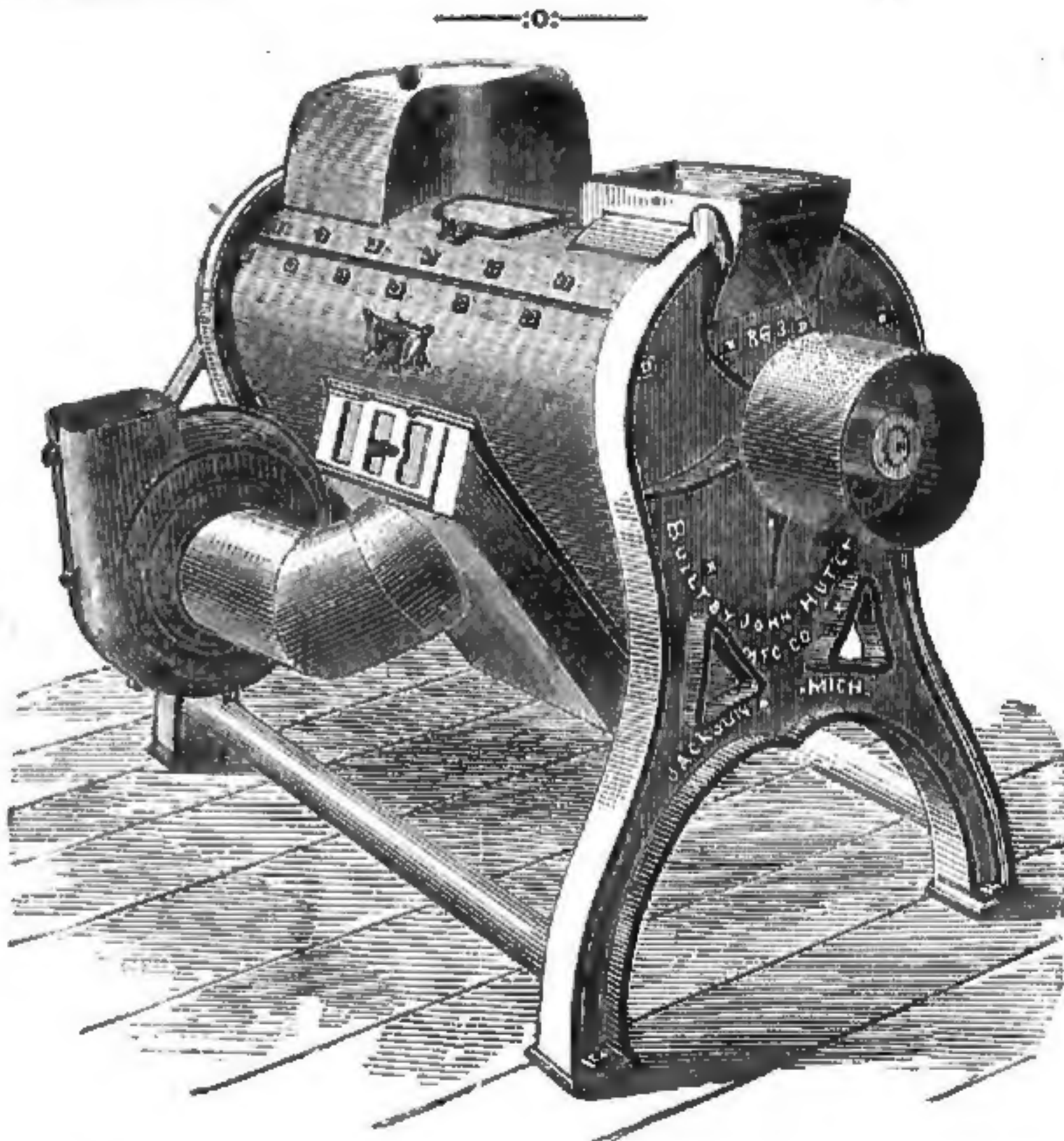


The above cut represents our New Rolling Screen, which is absolutely dustless and has as much scouring qualities as any two scouring machines now being made.

Send for Estimates for Our Full Roller Mills of any Capacity.



The above cut shows our New Round Slow Running Flour Bolt. We also build a Cylinder or Round Scalping Reel and we have lately built a number of new mills of medium capacity, using our Roller Mills, our Round Flour Bolts and Scalping Reels, getting better results than is usually obtained.

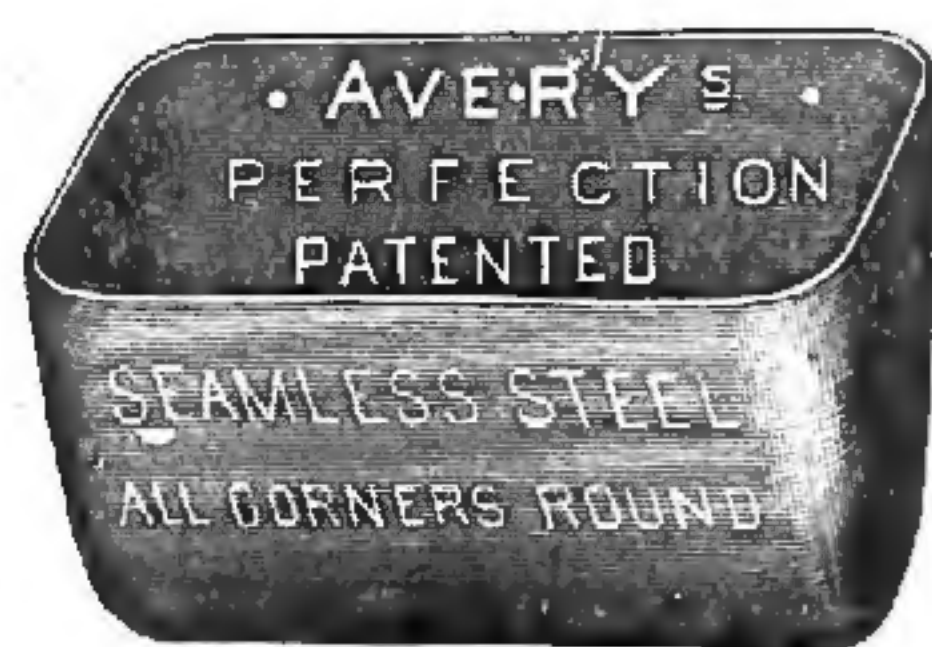


Hutchison's New Dustless Iron Corn Sheller, especially adapted for Mill and Elevator use.

—: ADDRESS ALL CORRESPONDENCE TO: —

John Hutchison Mfg. Co.

JACKSON. . . MICHIGAN.



ELEVATOR BUCKET.

✦ CORRUGATIONS ✦

What we know of corrugations can be found out by writing to US, or H. W. Caldwell, Chicago, Ill.

Stamping and Pressing of Sheet Metals for all Classes of Work. Also Tinning, Galvanizing and Japanning.

THE AVERY STAMPING CO.,

Cleveland, Ohio, U. S. A.

New York Office, 51 Cliff Street, HALL & NEAR, Agents.



CALDWELL'S PATENT.



SELF-TRAMMING

PORTABLE MILL

BEST GRINDING MILL MADE.

BOLTING CLOTH

AND

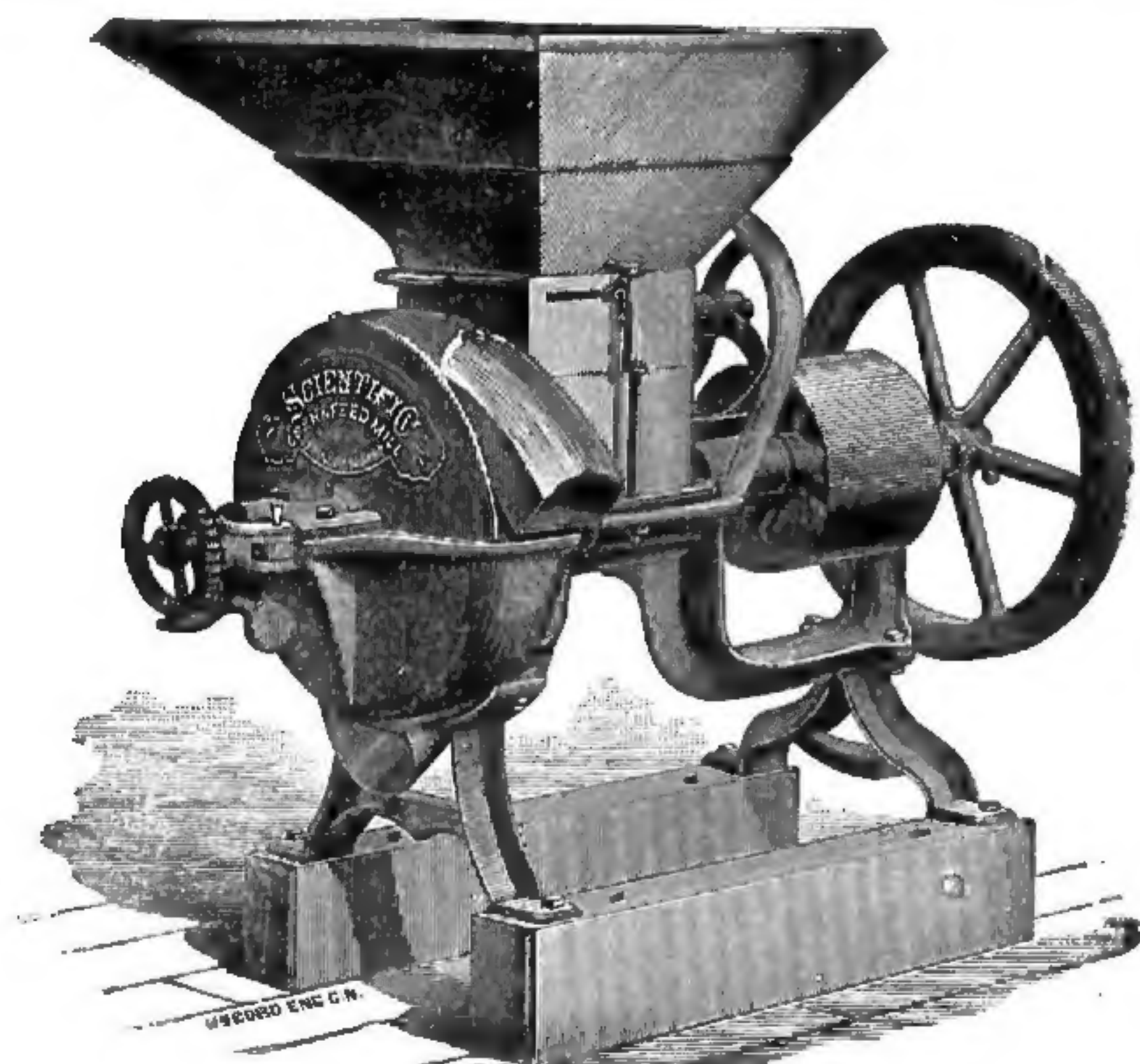
BURR AND ESOPUS MILLSTONES

WRITE FOR DISCOUNTS.

SAMUEL CAREY,

17 Broadway,

NEW YORK.



—THE SCIENTIFIC— GRINDING MILL.

POSITIVELY THE BEST MILL ON EARTH.

GRINDS PERFECTLY, EAR CORN, SHELLLED CORN,
AND ALL GRAINS.

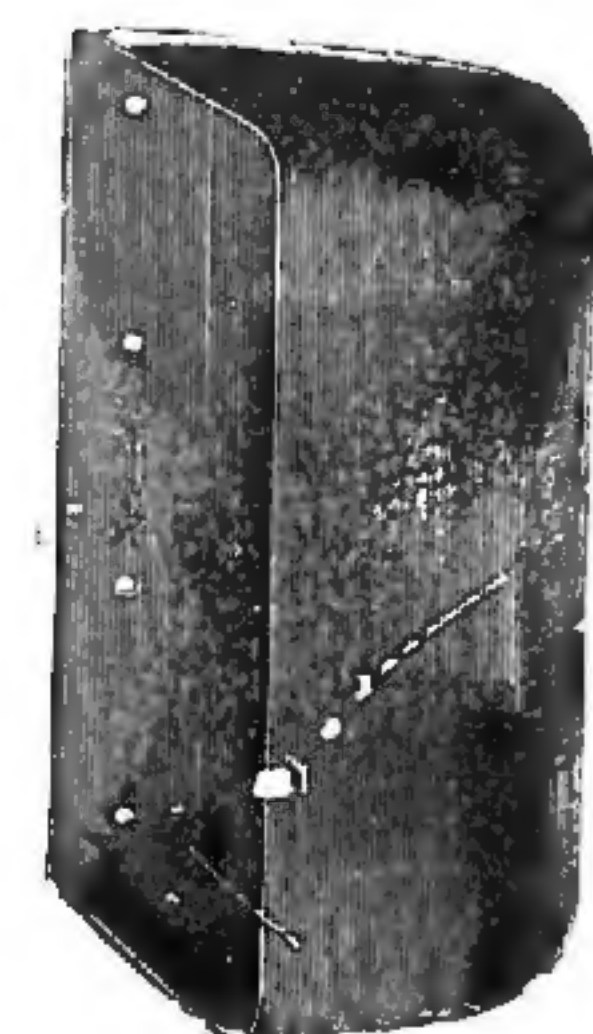
GRINDING PLATES A SPECIAL METAL

*Hard as Steel, Guaranteed to Grind from Five to Eight
Thousand Bushels before wearing out.*

SEND FOR ILLUSTRATED CATALOGUE, PRICES, ETC.

THE FOOS MFG. CO.

SPRINGFIELD OHIO.



STILL ON TOP.

Perhaps the **HIGHEST COMPLIMENT** that could be paid the "Salem" bucket is the fact that during the past few years ITS SHAPE HAS BEEN SO CLOSELY IMITATED by other manufacturers as to infringe our patented rights, but experience reveals the **IMPERFECTIONS OF IMITATIONS**, and we therefore take it as a **FURTHER COMPLIMENT** to the "SALEM" bucket that some of its old patrons who were *Induced to Try the Imitations have now Returned to the Salem Bucket, thereby Acknowledging it to be the Most Satisfactory.* Don't be deceived by other makes of buckets that are claimed to be "Just as Good." Insist upon having the **ORIGINAL AND RELIABLE SALEM BUCKET.** All legitimate Salem buckets are plainly marked with the word

SALEM

W. J. CLARK & CO., SOLE **SALEM, OHIO.**
Manufacturers

THORNBURGH & GLESSNER, General Agents, CHICAGO, ILL.